User's Manual

Version 5.7x

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Welcome to grandMA video

Thank you for placing your trust in this product.
This manual will provide all the necessary information for you to get the best out of your software.
The grandMA video software is subject to continual development. It is therefore possible that the entire information printed in this manual is out-of-date.
Up-to-date information can always be found in the current readme.txt file on the CD or the downloaded program disks.
You can download the actual software version via the internet at: www.malighting.de

We need your help!
If you have wishes or suggestions please send us an e-mail tech.support@malighting.de or visit our forum: www.ma-share.net .

Looking forward for a good cooperation
Your grandMA video team

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1 What is grandMA video?

grandMA video is a software based media server, for both still and moving images, that is fully integrated into the grandMA lighting control system.

- An affordable software solution for controlling, live-accessing and altering video, still images and 3D-objects in real-time
- Fully optimized for “off-the-shelf” PC hardware, but also complete solutions including server-hardware and moving video lights available.
- All videos, still images and 3D-objects can be scaled, positioned, tiled, colored and manipulated directly from any grandMA console; including Content Browser
- Six layers with full effects capabilities for high-resolution projections (e.g. XGA / 1,024 x 768 pixels)
- One master layer for shaper effects iris effects and PC remote controlling
- Layers for keystone effects
- Layers for softedge effects
- Straightforward set-up and configuration that utilizes bi-directional communication with the grandMA console; grandMA video is an integrated part of the grandMA network session
- Instant live-access to any kind of image, 3D-object or video – including content-preview in your presets
- Extensive media library included
- Video In feature to fade in live videos
- Synchronization of videos via MA network
- Blind Programming support
- Pixel Mapper to control several LED walls via Artnet
- Artnet Panel Simulator

Main Features

grandMA video is a software based media server for the grandMA range of lighting control consoles. It uses a Windows PC to facilitate the control of video and still images directly from any grandMA console and runs on readily available PC hardware. As fully integrated part of the grandMA network system, grandMA video is not just triggered via DMX. This has many advantages. On the one hand a minimum of setup and configuration is required due to bi-directional communication between the console and the grandMA video software. On the other hand the grandMA console allows for direct access to the server (content browser) and previews the content as thumbnails in the preset.

The grandMA video software enables a console operator to control and alter videos, still images and three-dimensional objects in real-time from a grandMA lighting console. Three-dimensional objects can be textured with video clips or animated images. Videos, still images and three-dimensional objects can be manipulated in multiple ways and in the same intuitive manner as a lighting fixture is manipulated from the grandMA console.

Functions and Features

At its most basic level, grandMA video allows for the control of several moving images and high-resolution images simultaneously. Videos and still images can be combined, mixed and controlled using any grandMA console like a regular multi-parameter fixture. For this, six layers are available plus several master layer with keystone and blade effects and additional layer for soft edge controlling.

In addition, grandMA video offers the possibility of choosing any three dimensional object as a surface for video or still images. Cubes, cylinders, spheres, extruded logos or any other three-dimensional shape can be “textured” with complimentary images or videos. The position and orientation of these three dimensional objects are fully controllable from the grandMA console. You could start with a cube rotating and progress to a three-dimensional logo flying around, but from then on, you are only limited by your imagination.

Each image or video that is used at the same time requires a layer. Since the brightness of each layer is controllable, it is possible to cross fade from one video image to another by cross fading from one layer to another. By controlling and mixing the output of the grandMA video software, your grandMA console has become a video mixer.

Video and Image Library

grandMA video comes with an library containing images, gobos and video clips.
This library contains over 50 video loops and over 1,000 licensed high-resolution gobos from renowned designers. Over 300 textures and a number of special Video files complete your new design tool box.
Content from other providers, and videos and images you have created yourself can easily be added to the system. grandMA video supports *.avi and *.mov files and all required codec’s are installed as part of the installation process. JPEG images and standard Windows bitmap images (*.bmp, *.rle, *.dib) as well as CompuServe images (*.gif) are also supported.

2 System requirements

- IBM® compatible PC or notebook with at least 2,4 GHz processor with at least 512 MByte RAM
- Ethernet card with 10/100 MB
- Highspeed 3D graphics card with hardware acceleration with at least 64 MByte video memory and 1024x768 pixel resolution or above
- 2 GByte available disk space on hard disk
- Microsoft Windows® XP operation system (SP2)
- Microsoft DirectX® version 9 or above
- Actual grandMA console software or grandMA onPC

2.1 Recommendations for the target system

To setup a grandMA video system with a good performance all components should be well suited to each other.
For example to present a video in PAL quality a great amount of data has to be handled. To imagine the amount of data that has to be processed we give a short example for a simple PAL video:
- Resolution 768 x 576 pixel
- 25 fps (frames per second)
- 24 bit color depth
768 x 576 x 25 x 24 = 265 420 800 bps (bit per second)
That means ca. 33 MByte/second have to be streamed to the output card for only one uncompressed PAL video!!

- One important unit of measurement for the system speed is the CPU speed and its adjustment to the main board chipset. The speed should be above 2 GHz and the chipset must be optimized for the CPU type to reach a high data throughput.
  - We do not recommend a preferred manufacturer.
  - A 64 Bit CPU type will not improve the performance.
  - A dual processor system will not improve the performance too.

- To increase the drive speed we recommend a RAID array (**R**edundant **A**rray of **I**nexpensive **D**rives) configuration of two or more hard disks with RAID0 (level 0) configuration. RAID0 writes data across the drives in the array, one segment at a time. This configuration is also referred to as "striping." Striping offers high I/O rates since read/write operations may be performed simultaneously on multiple drives.

- The next eye of a needle in the system is the graphic card.
  Use a state of the art graphic card with at least 64 MByte memory and fast hardware acceleration.

3 Copy protection (USB Dongle)

grandMA video is protected against unauthorized copying with an USB dongle (electronic key).
You can use the software without any restrictions without this dongle but the output signal will be disturbed with a bouncing water sign and the Fullscreen view switches back after a while.

For the use of several grandMA videos in one network the use of one multi license dongle is possible. So only one dongle connected to one PC in the network provides all applications with the necessary licenses. Also have a look at 9.2 Toolbar.

4 Installation

The installation is divided into several parts:
- Installation of the grandMA video application (Program CD)
- Installation of the Apple QuickTime platform (Program CD)
- Installation of MPEG2 Codec for the Apple QuickTime platform (Program CD))
- Installation of the additional BluffTitler Software (Program CD)
- Installation of the grandMA video libraries (Content DVD 1..3)

4.1 Installation of the grandMA video Application

The installation is divided in several parts, the installation of the program and additional software and the library installations.
The installation of grandMA video, Apple QuickTime and MPEG2 Codec are necessary, video libraries and BluffTitler are optional.
So the amount of data is reduced if you want to update the program only.
You must do the installation procedure for the grandMA video program and the additional packages separately:

The actual version of the video application can be downloaded from the Internet.
Internet downloads:
Please extract the downloaded file into a temporary folder and run the 'Setup' (VIDEOxxx.exe) program.
CD/DVD version:
The installation program should start automatically after inserting the ‚grandMA video' CD.
If not, you can run the installation .exe program from the root directory.
Note:
You should have administration rights to install the program.
To work with grandMA video without administration rights you have to arrange the administration rights by the administrator on the installation path e.g.:
C:\Program Files\MA Lighting Technologies\grandMA video

Before you install a new version of the program, please be sure that you have un-installed any old versions! You must un-install the application from the control panel under 'add/remove programs'. It's not sufficient to just delete the files.

4.2 Installation of the Apple QuickTime Platform

To play QuickTime movies (.mov) with grandMA video you have to install the QuickTime platform.
QuickTime enables your computer to handle Video, graphics, sounds, sprites, text VR panoramas, animation, and content streamed over the internet. The installer lets you choose the QuickTime software you want, and places the appropriate locations on the computer. For further installations choose the QuickTime Updater in the QuickTime folder.
The QuickTime platform installation is available on the installation DVD and will start automatic within the installation process.

4.3 Installation of the MPEG2 Codec

To play MPEG2 coded movies with grandMA video you have to install this licensed Codec.
For this purpose start the installation program: DWINQuickTimeMPEG2.exe

4.4 Installation of the Video Libraries

The libraries contain video clips, images and gobos. Hence it is a huge data package.
So the installation of the video libraries is distributed on several DVDs.

The following libraries exist:

Name	Description	Size
SET 1		
MALIGHTING-MASKS	57 MASKS 1024*768	~ 7.1 MB
MALIGHTING-TEXTURES	304 TEXTURES 1024*768	~ 88.3 MB
MALIGHTING-CLIPS1	91 Videos 1024*768 (Particle Illusion Clips)	~ 1.13 GB
MALIGHTING-CLIPS2	26 Videos 1024*768 (cinema Videos)	~1.9 GB
MALIGHTING-CLIPS3	33 Videos 768*576 (nature Videos)	~1.1 GB
SET 2		
MALIGHTING-CLIPS4	35 Videos 768*576 (nature Videos)	~1.8 GB
DFDESIGN	33 Videos 640*480 QMOV	~1,8 GB
IDYLLHANDS	34 Videos 640*480 QMOV	~0,6 GB
SET 3		
HIGH_D-CLIPS1	15 Videos 1024*768	~1,5 GB
HIGH_D-CLIPS2	14 Videos 1024*768	~1,4 GB
HIGH_D-CLIPS3	17 Videos 1024*768	~1,5 GB
HIGH_D-TEXTURES	40 Images 1024*1024 (textures)	~6.1 MB
DHA	1021 Images 1024*768 (DHA Black/White Gobo Library)	~ 16 MB
MALighting Ideas	7 Videos 768*576 (misc Videos)	~0.4 GB
	Sum:	11,8 GB

4.5 Version of grandMA desk or grandMA onPC (off-line)

The Version number of the desk must fit to the version number of grandMA video!
You can find the version number of the grandMA video application in the Aboutbox via the menu entry 'About':

The corresponding desk version is shown in brackets () behind the grandMA video version.

The first two digits of the desk version n.n must be identical with this number.
Otherwise the communication with the desk is faulty

Desk Version n.nxx

n.n represents the version (streaming) number of the desk software.
This number should correspond to the desk- or onPC software version !

The grandMA onPC software can run on the same PC or on an external PC connected via Ethernet.

4.6 IP Addresses

IP addresses are what allow the internet and most modern networks to work. It's a way of identifying a computer by a unique set of numbers (an IP address). An IP address is made up of a set of four numbers. Each number can have a value between 0 and 255.
Your PC and the grandMA must have their respective IP addresses set up correctly.
The first three sets of numbers must be the same and the last set must be different.
For example:

GrandMA console IP address:	192.168.0.5
PC with grandMA video IP address:	192.168.0.10

To setup the IP address of the desk, please refer to the grandMA user's manual.

4.6.1 How to set the IP Address of the PC

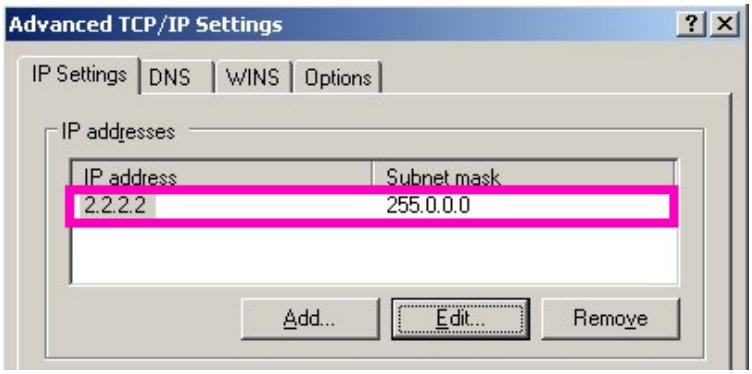
Please note if you are already part of a network please check with your network administrator before changing your IP settings (you may not need to!) and before connecting any device, such as a lighting console, to an existing network.

Windows® XP

- START – CONTROL PANEL – NETWORK CONNECTIONS
- Double click on LOCAL AREA CONNECTION
- Select INTERNET PROTOCOL (TCP/IP) from the list of protocols.
- Click on PROPERTIES
  In the properties window you will see either your existing IP address or a selection that says OBTAIN AN IP ADDRESS AUTOMATICALLY.
  In the case of the latter
- Click on the radial button USE FOLLOWING IP ADDRESS.
- Click OK once you have entered your required IP address.
  This may prompt an error box to appear telling you that a SUBNET MASK is required, however, when you click "OK" you should see a default SUBNET MASK (255.255.255.0) has already been input and you can just click OK to leave it.

4.6.2 Artnet IP Address

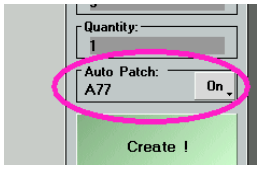
The Artnet Standard needs a class A IP address beginning with 2. for example 2.2.2.2 and a subnet mask 255.0.0.0.
This address can be added via the Windows dialog Advanced TCP/IP Settings:



Further information about the Artnet protocol under:
© Artistic Licence (UK) Ltd. www.artisticlicence.com

5 Communication with the grandMA Desk Series

Notice that the DMX channels have to be ‚patched' to communicate with grandMA video.

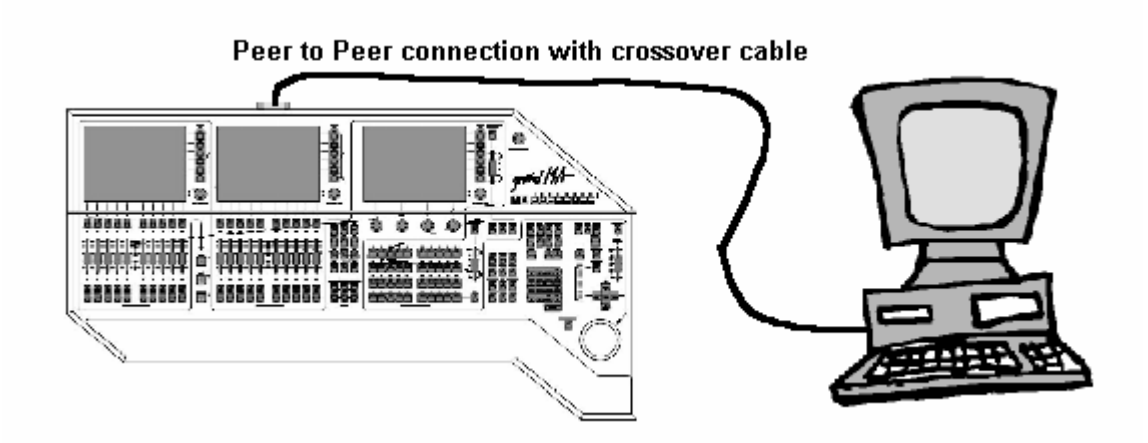


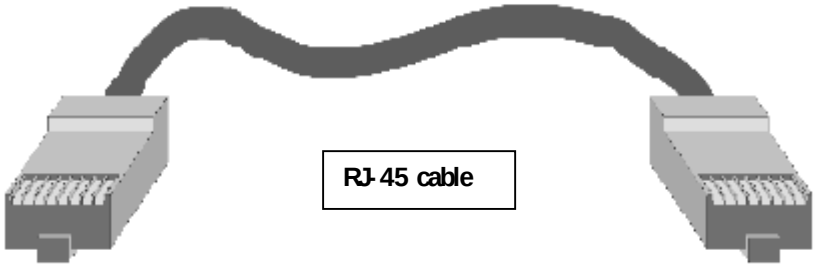
The simplest way of ‚patching' is to set the switch ‚Auto Patch' in the dialog ‚Create New Fixtures or Channels' to ‚On' at the desk or the Offline.

5.1 Connection with the grandMA desk

Please make sure, that the program version of the grandMA desk meets the specifications described in: *4.5 Version of grandMA desk or grandMA onPC (off-line) .*

For communication you have to connect the PC with the grand MA console or another PC running the onPC editor.
You can do this directly with a patch crossover cable with two RJ-45 connectors.





If you use a network with a hub or a switch, connect the PC with a regular patch network cable to the hub or switch.

- Connect the cable to the desk.
- Start the desk and load a show
- Start a new session at the desk (MA Network Connections ‘Start New Session’)
- Start the grandMA video application with ‘New document’

The application automatically connects to the desk and receives the data of the current show.
If you do not get an automatic connection to the desk, you can invite the grandMA video to the desk session or join the desk session from the grandMA video application via the network dialog.

5.2 Connection with the grandMA onPC (off-line) software

Please make sure, that the program version of the grandMA onPC software meets the specifications described in: *4.5 Version of grandMA desk or grandMA onPC (off-line)* .
Both applications, grandMA video and the grandMA onPC can work on the same PC or you can use two PC's connected via Ethernet.

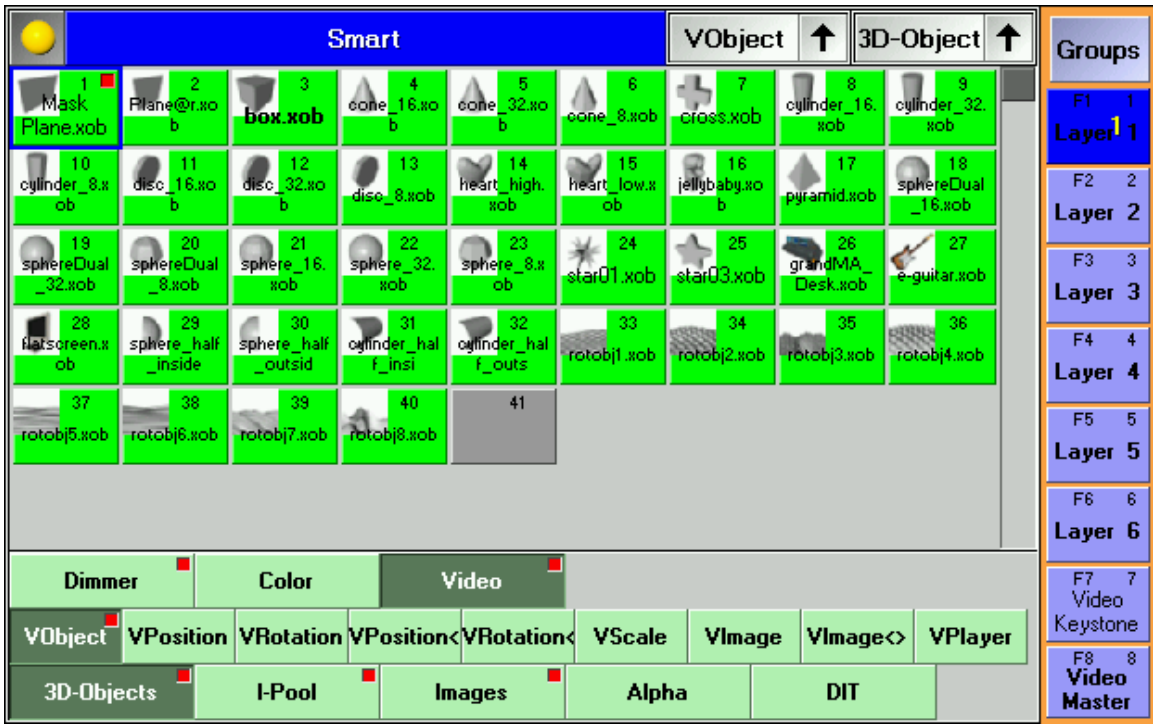
- Start the grandMA onPC and load a show (Backup Load Show)
- Start a new session at the grandMA onPC (MA Network Connections 'Start New Session')
- Start the grandMA video application

grandMA video searches for a running grandMA onPC session wit a unique ID. If the session is found grandMA video connects automatically with this session and loads the current show.

If you do not get a connection to the desk, make sure that grandMA video doesn't run a master session.

5.3 Preferred Operation Mode (Screen Layout)

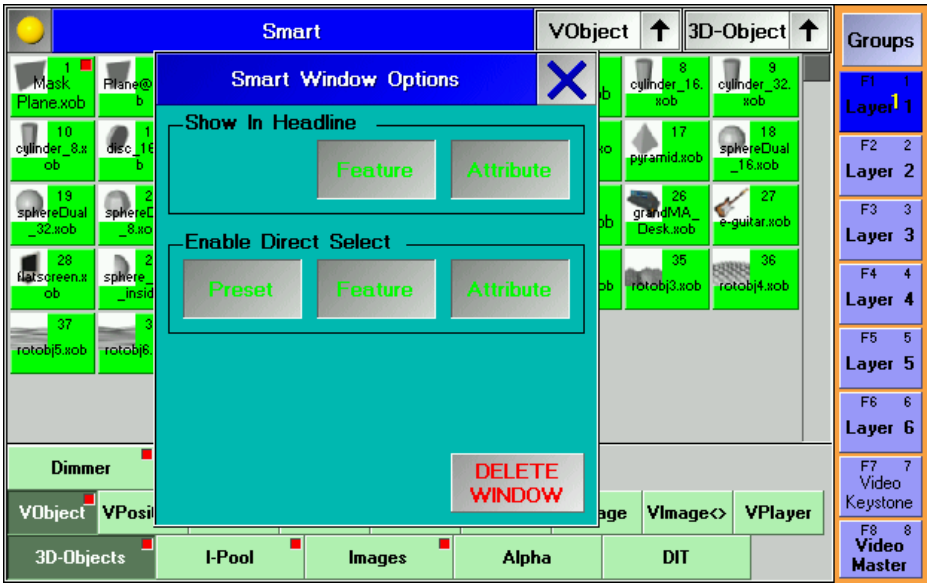
To get a direct access to the channel sets of the fixture layers we recommend the smart view:



The "Smart View" offers a clearly arranged summary about the layer content and objects. All important functions can be assessed via short keys.

To configure a “Smart View“ follow the following instructions:

- Click on the empty touch screen to call the “Create a Window” dialog
- Select the “Smart” button
- In the upcoming “Smart” window press the yellow button left above:

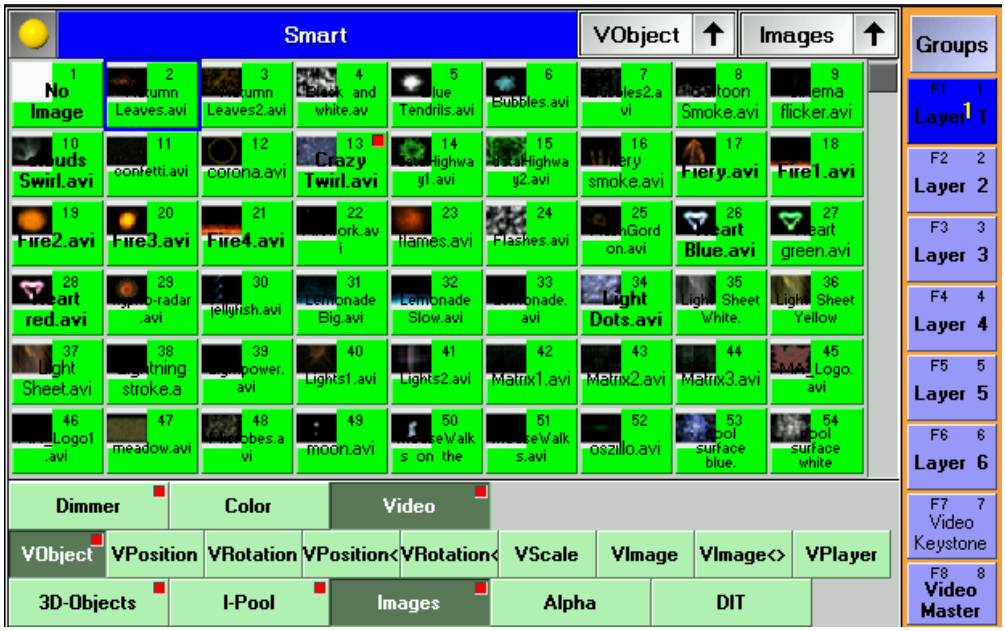


- In the “Smart Window Options” dialog select the “Enable Direct Select” buttons ”Preset” + “Feature” + “Attribute”

To create the “Group” buttons carry out the following instructions:

- Press the “Setup” key at the desk
- Push “Auto create” at the touch screen
- Set the “Select” entry in “Video Layer” and “Video Master” to “Yes” and press “Create single Groups only”
- Change into the “Smart” view and resize the smart window to get space for the group buttons
- Click into the blank area and select “Groups” in the upcoming dialog

The result should look like this:



6 Data management

This section describes how data is managed by the desk and the application.
The setup of the application can be done independent from the desk.

Master / Slave:

If the console and video application are connected you can determine via the Network LED, whether the application runs in master or slave mode. The master, usually the console, holds the current show data.

6.1 Desk Connection

When you launch grandMA video it tries to connect to a session with the same ID.
The four possible states of the connection are indicated by the button in the toolbar:

The LED is grey.
No connection to a session exists or the ‘allow to invite’ flag is off.

The LED is red.
At least one Session was found on the Network. grandMA video is not member of a session. Maybe that the „Allot to invite“ switch is not set or the Session ID is different

The LED is Green with an ‘S’.
GrandMA video has joined a session as slave.

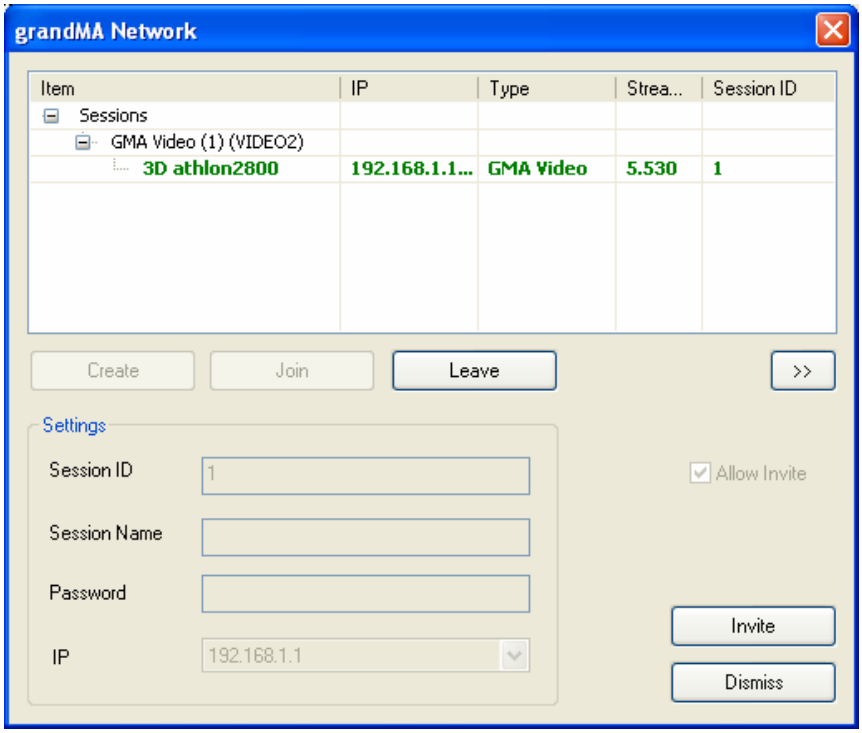
The LED appears blue with an ‚M’.
GrandMA video has the Master function of a session.
The creation of a session with grandMA video can be used to transfer all data of a .ped file (grandMA video format) to a desk or onPC. If the loading is completed, the desk automatic becomes the master and grandMA video gets the slave.

ATTENTION: With the start of a new session (Create) the session founder overwrites all data of the other members. I.e. if a new session is founded by the grandMA video **all** data in the desk will be overwritten!

If more than one console, visualizer or onPC editor is connected to the network the connections to the equipment will have to be properly assigned.

- The communication between consoles, visualizer, video applications and onPC editors takes place in sessions.
- A session has only *one* founder. This is e.g. the master. On connection the founder transfers its data (fixture types) to the slaves.
  From then on, all session members are synchronized and have equal rights. If a fixture is edited in the slave the change is reflected in the master and vice-versa.
- Devices not assigned to any session are not in the list.
  If you press the ‘Invite’ Button you get a list of these MA devices.
- A Session always has a master and up to 31 Slaves, i.e. max. 32 devices. For example a slave can be another MA desk, an NSP, a grandMA Offline application or a grandMA video application. So up to 31 grandMA Video applications can be operated simultaneously at one desk.

The network configuration can be managed by the ‚Desk Connection' dialog:



Remark: If the session entry appears in red, the streaming version is wrong. You have to update the software.

With the **‘>>’** button you can expand the dialog.

The upper part of the dialog shows the active sessions and their members in a tree view.
The session master is printed bold.
GrandMA video is printed green.

Create (a new session):
GrandMA video creates a new session as master. This function is used for example if a show exists as .ped-file (grandMA video Format). The show with all data is sent to the slave. It must not be loaded via disk to the desk. If the loading is completed, the desk automatic becomes the master and grandMA video gets the slave.

Join (Session):
Join the selected session as a member (usually as slave).
After that data of the desk is transferred to the grandMA video.

Leave (Session):
Leave the session.

>>:
Expand the dialog view.

Settings:

Session ID:
Every session in the grandMA network has a unique ID.
Only members with this ID can take part in this session.

Session Name:
Input or display for the name of a session.

Password:
If a password is required for the session you can enter it in this field.

IP:
Use this listbox to choose an IP address for network communication. If there is more than one IP available (e.g. multiple network cards installed) select the IP address which is linked to the grandMA desk.

Allow Invite:
If the switch is on, grandMA video can be invited to a session.

Invite:
Opens a dialog showing all connected MA members (desks and onPC) in the network.
You can invite new members via the dialog.

Dismiss:
The member of the session has to leave the session.

6.2 Principle function diagram

The following pattern demonstrates how data is processed.

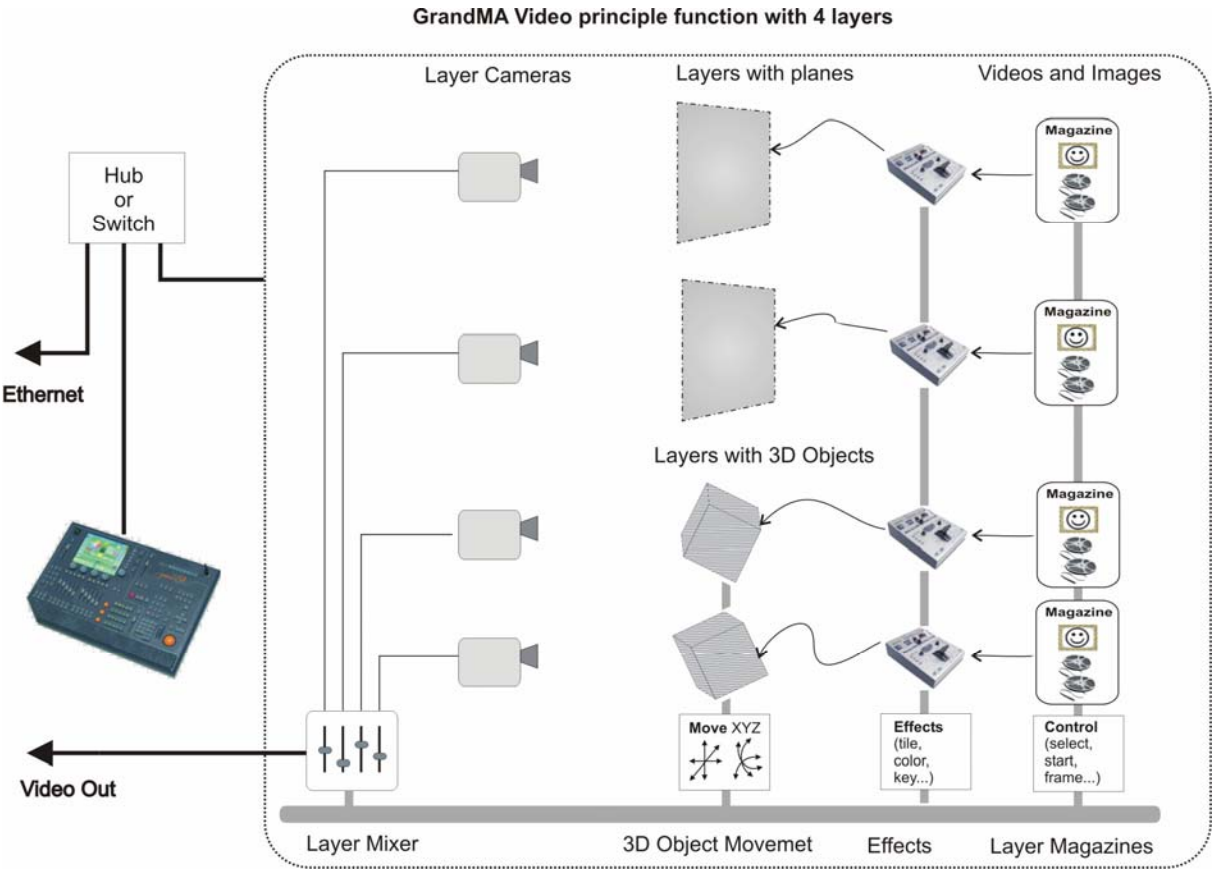
If you connect the grandMA video to an MA desk you can compare the result with some slide projectors remote controlled by an MA desk.
In contrast to a slide projector the slides are not projected on the screen. The screens or 3D objects are active light emitters like monitors and can take the shape of any geometric form. This takes place on so called “Layers”. Every Layer output feeds a virtual camera.

The virtual camera outputs can be mixed up to a resulting video output.
Every layer has its own magazine containing emitting 3D objects.
Every layer has its own magazine containing videos, images and masks.
The number of layers can vary in dependence of the complexity of your show.

If the grandMA video is invited in a session by the desk, every layer behaves similar to a fixture.
The application receives the amount of layers and every layer magazine is assembled with several images and videos. These are indicated by their relative paths and names.
If a layer 3D object or the content of a magazine is changed within grandMA video, the changed properties are immediately taken up by the desk.

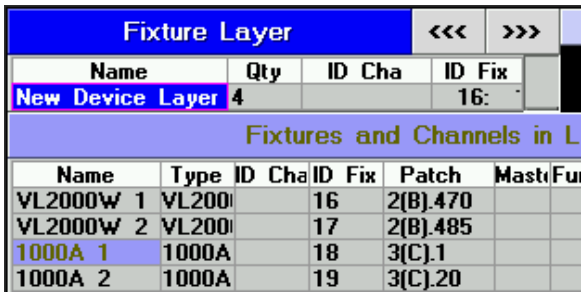
Several grandMA video applications are shown in several “Layers” on the MA-desk.

The following diagram shows a principle structure with 4 layers.

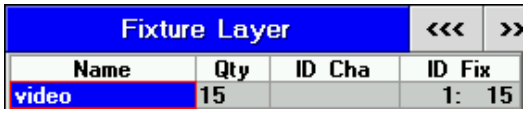


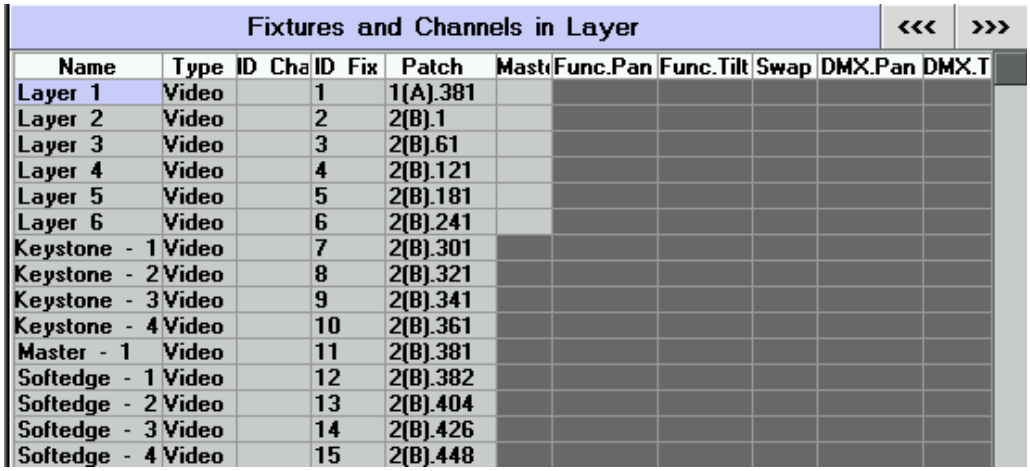
6.3 Layer properties

For a better overview shows can be arranged in Fixture Layers on the grandMA desks. E.g. the conventional lights can be separated from the multi functional fixtures and video engines.
In the example below you see a show in the Fixture Layer named ‘New Device Layer’ with two VL 2000 W and two VL 1000 A:

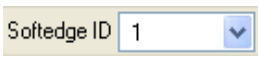


According to this example for every grandMA video show an own Fixture Layer is created. This Layer accepts several Video Layers. These Video Layers can be combined to meet your requirements.
In the following example the Fixture Layer with the name ‚Video’ contains 6 Video Layers, 4 Keystone Layers, 1 Master Layer and 4 Softedge Layers:





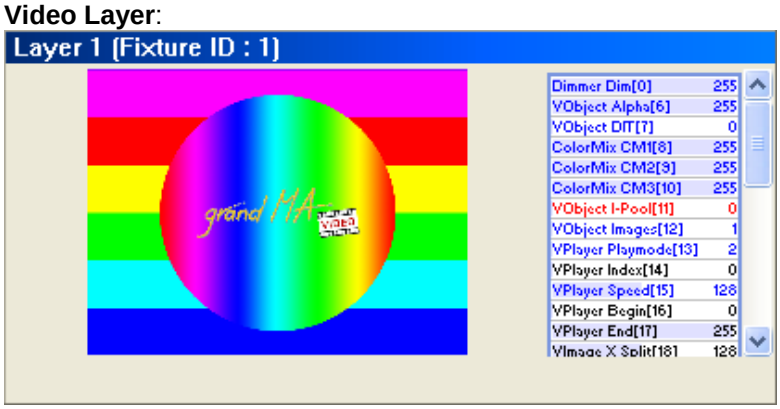
Layers for a video show can be arranged for your requirements on the desk. You can find them in the fixture library at the entry: ‚MA LIGHTING’.
One Fixture Layer can contain multiple Keystone- and Softedge Layers. In this case the application offers a ‘Softedge ID’ selection box in the status bar. Through this one video show can control several grandMA video applications with several Softedge- and Keystone Layers.



For every grandMA video PC an individual Softedge ID is selected.
So each projector shows his individual Softedging and Keystoning for this show.

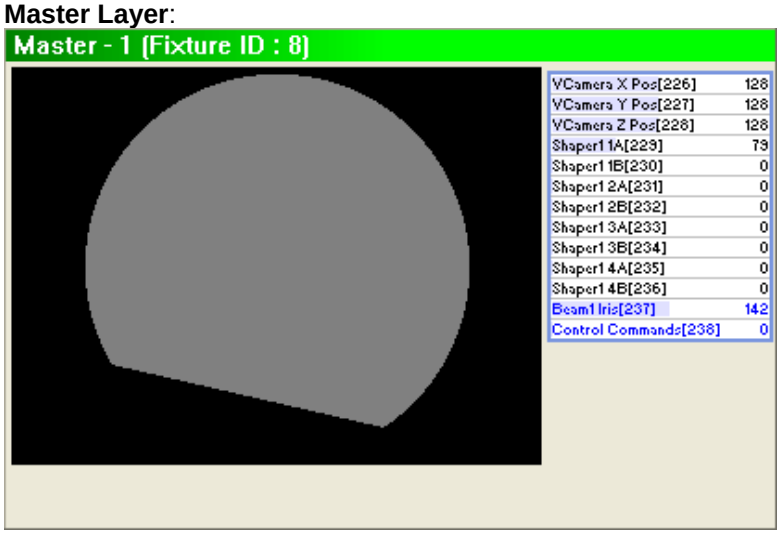
The different Layer Types have the following meanings:

Video Layer:



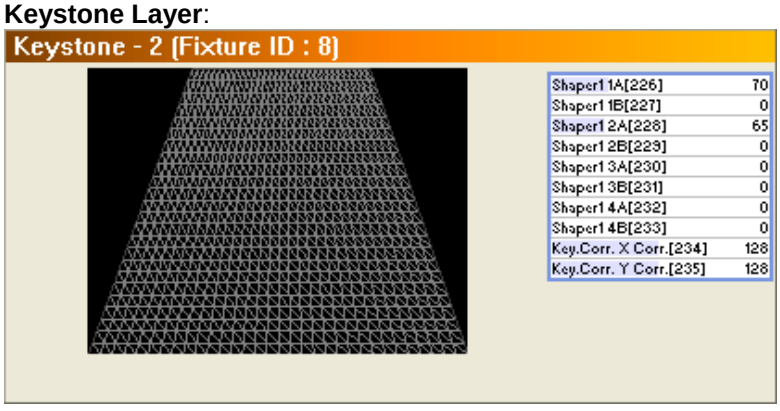
This Layer can use several 3D Objects from the library to represent images and videos. One grandMA video application can contain up to 6 Video Layers for images and videos.

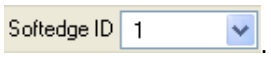
Master Layer:



One grandMA video application can contain only one Master Layer. This layer represents a total view on all other layers. It serves the shapers and iris effects and the position of the camera 'VCamera X, Y and Z' for the resulting output image.
A control channel offers
- remote controlled PC shut down
- Switch to the Fullscreen View

Keystone Layer:

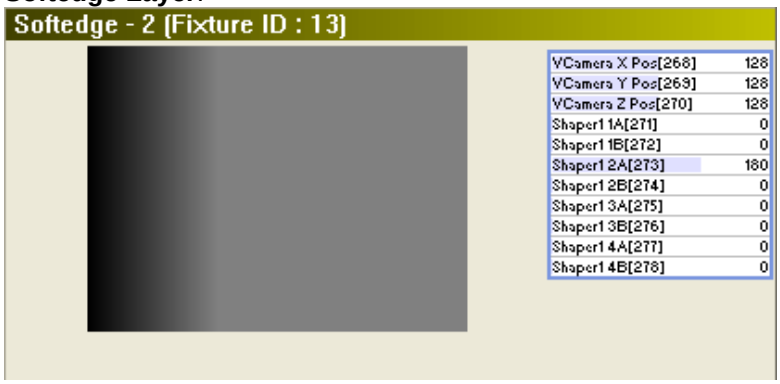


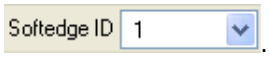
One grandMA video application can contain several Keystone Layers.
Switching between these layers is done with the select box in the status bar: 

.

This layer represents a total view on all other layers to realize the keystone effects.

Softedge Layer:



One grandMA video application can contain several Keystone Layers.
Switching between these layers is done with the select box in the status bar: 

.

These layers represent a total view on all other layers and realize the soft edging, i.e. the seamless cross fading to show one image with several projectors. Therefore the channels of the shapers are used similar to the blades of the master layer.

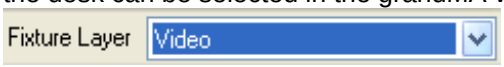
6.4 Predefined Constellations (.PED Files)

With the installation of grandMA video the most common constellations are installed. These are available via the menu entry ‚File – Open…' in the folder ‚New'.
If a grandMA video application is started, and a new show is created via 'File – New' the application loads the configured file 'New.ped'. Other predefined shows can be loaded via ‚File – Open…' from the folder ‚New'.
These files contain the following configurations:

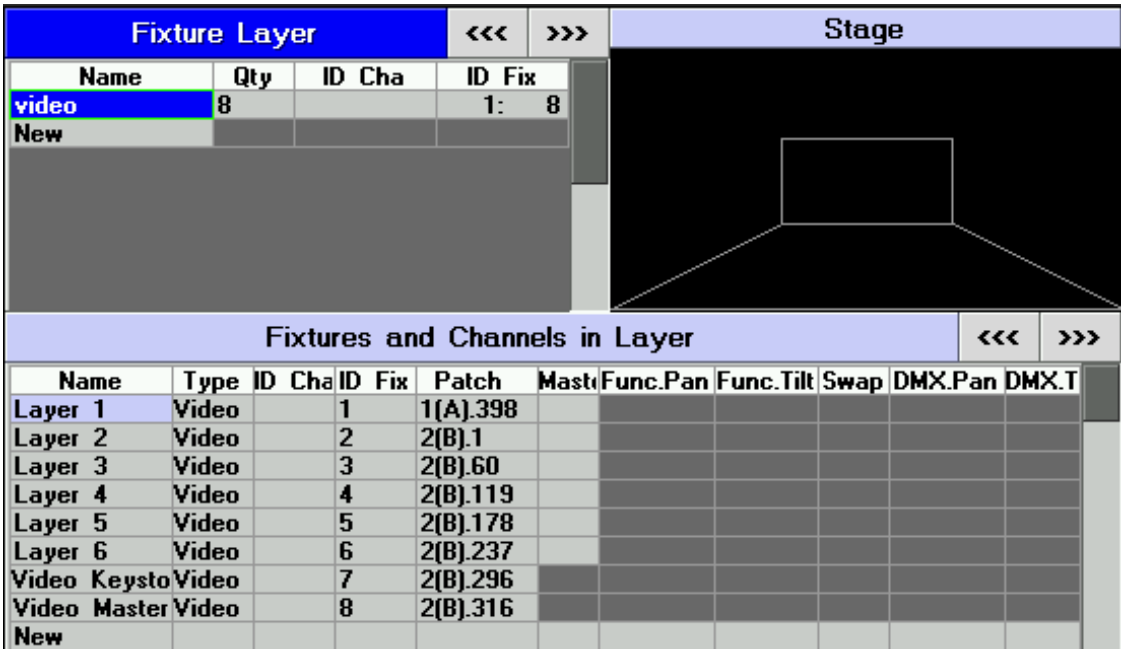
Filename (in folder New)	Video Layer	Keystone Layer	Softedge Layer	Master Layer	Master Control Layer	Description
new.ped	6	1	-	1	-	Will be loaded via ‚File – New'. Projection of 6 Layers without Softedging
new softedge.ped	6	4	4	-	1	Projection of 6 Layers with Softedging for up to 4 projectors

7 Several grandMA video applications in one grandMA show

Several grandMA video applications can be provided with one desk simultaneously.
For each grandMA video application one fixture layer is created on the desk.
A grandMA video application is working in the "MA-Net" and is identified via the fixture layer name.
All PCs running grandMA video with the same fixture layer name will "grab" what they need out of the data stream and show the same show with the same content. Several "video-fixtures" configured in the desk can be selected in the grandMA video application via a drop down menu:

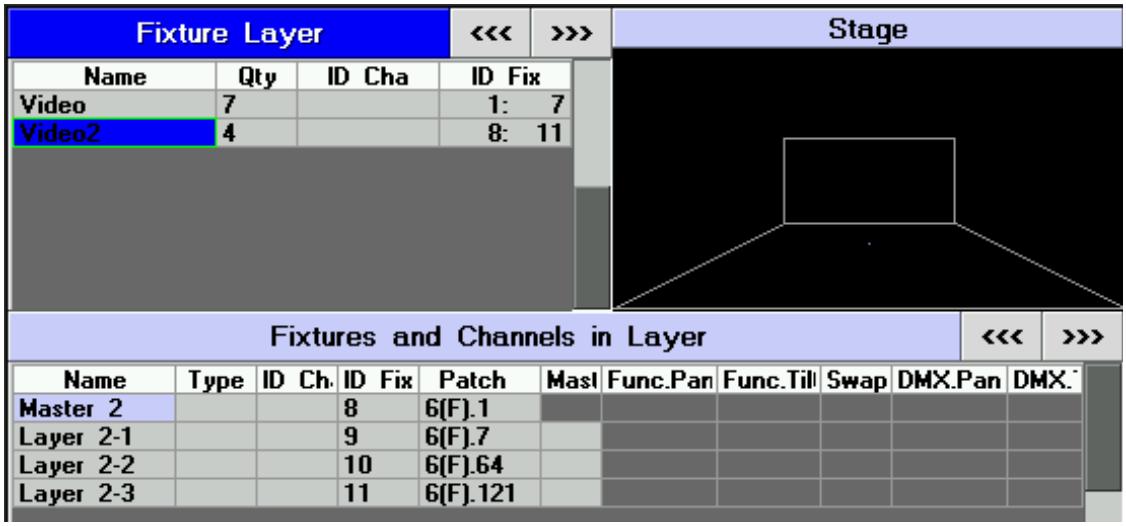


Example with one connected grandMA video application in one Fixture Layer:


Fixture Layer
<<<
>>>
Stage
Name Qty ID Cha ID Fix
video 8 1: 8
New
Fixtures and Channels in Layer
<<<
>>>
Name Type ID Cha ID Fix Patch Mast Func.Pan Func.Tilt Swap DMX.Pan DMX.T
Layer 1 Video 1 1(A).398
Layer 2 Video 2 2(B).1
Layer 3 Video 3 2(B).60
Layer 4 Video 4 2(B).119
Layer 5 Video 5 2(B).178
Layer 6 Video 6 2(B).237
Video Keysto Video 7 2(B).296
Video Master Video 8 2(B).316
New

A layer in grandMA video is analog to a Fixture in the grandMA desk
So if you use for example 6 layers 6 fixtures are patched and shown in the Fixture Layer of the desk.

In this example a second Fixture Layer named Video2 has been added for a second grandMA video application with one Master Layer named Master 2 and three Video Layers named Layer 2-1…2-3:


Fixture Layer
<<<
>>>
Stage
Name Qty ID Cha ID Fix
Video 7 1: 7
Video2 4 8: 11
Fixtures and Channels in Layer
<<<
>>>
Name Type ID Ch ID Fix Patch Mast Func.Pan Func.Til Swap DMX.Pan DMX.
Master 2 8 6(F).1
Layer 2-1 9 6(F).7
Layer 2-2 10 6(F).64
Layer 2-3 11 6(F).121

8 Quick Guide

This capture gives a brief description how to operate with the grandMA video application.
To give you a sense of achievement grandMA video is delivered with a short demo file ‘New.ped’ that gives a survey of the possibilities of manipulation.
If you carry out this example the video application starts a master session and transfers its show to the connected desk or onPC.
Attention! Consider that the actual desk show will be overwritten if you carry out this example. So please start a new empty show on the desk as described.

For the following steps a grandMA desk or the grandMA onPC should be connected.
Without the connected desk, or onPC editor, you are able to do the setup of the .ped (Projector Engine Document) file where the used pictures and videos are stored, but you cannot control the resulting output via the desk.

8.1 Step 1 – Start master session and connect to the desk

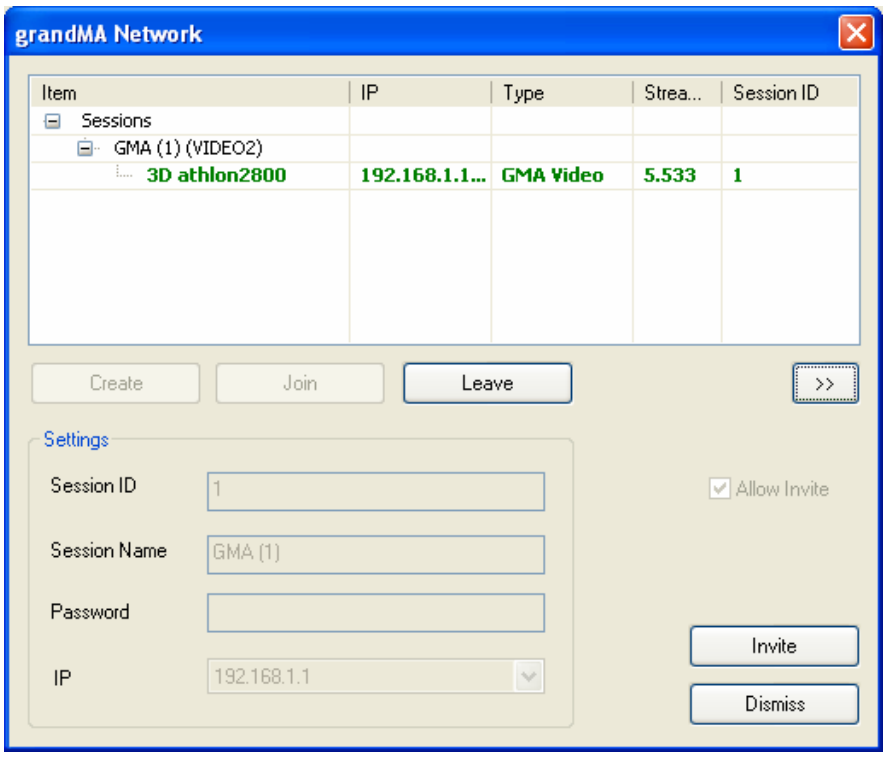
- Start the connected desk or onPC with an empty show.
  (Backup; Load Show; New Show)
- At: ‚Tools’ ‚MA Network’ make sure, that no session is running.
  If not, stop the session with ‘Leave Session’.
- Then start grandMA video.
- The default show ‘new.ped’ will be loaded

If no MA session is found, this is indicated by a grey LED.

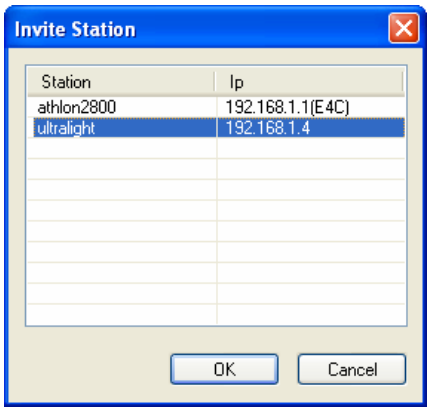
Create a new session by opening the network dialog (click on MA Network), and then click the ‘Create’ button.

The Master state will be indicated by the blue LED framing the ‘M’.

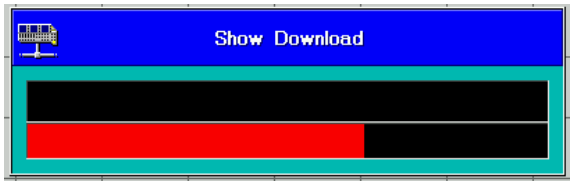
Now you can invite the desk or onPC to the MA session:



- Expand the network dialog with the ‘>>’button
- Open the next dialog with the ‘Invite’ button



- Select the station to be invited and confirm with ‘OK’

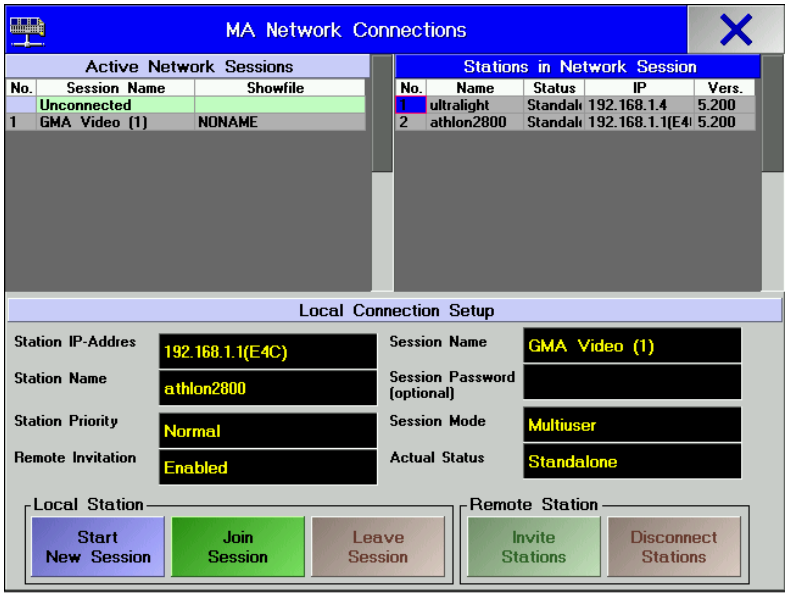


The show data of grandMA video will be transferred to the desk. This is signaled on the desk with a bar.

Note:
GrandMA video can create a session as a Master. If a desk joins into this session, the desk will become the master and grandMA video will become the slave. All show data on the desk will be overwritten!

From now on the desk becomes the master of the grandMA session and grandMA video joins as slave:

This is indicated by the green LED ‘S’.
GrandMA video had joined the session as slave-



You also can join the session via the desk or onPC.
Therefore select the ‘Tools’ button on the desk and open the ‘MA Network’ dialog.

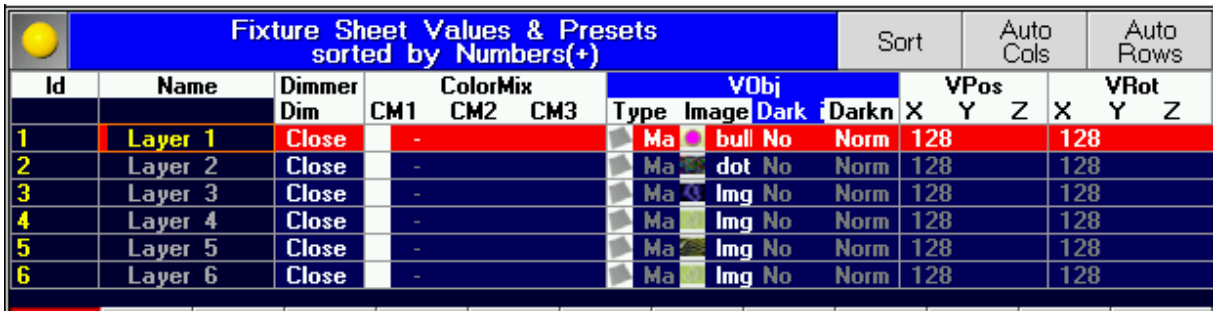
Select the ‘Active Network Session’ and click on ‘Join Session’.

The show will be transferred to the desk and the desk will become the master of the session (if it was created from grandMA video).

8.2 Step 2 – Controlling Images and Videos via the MA desk

Now you have assess to the images and videos arranged in the demo show of grandMA video.

The surface of the touch screen should look like this:



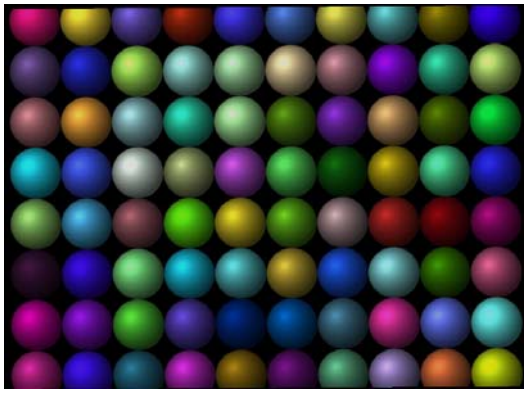
The column ‘Name’ shows all configured layers of the show file (new.ped).
In the columns beside all available effects for this layer are listed.

Now we’ll see how to control grandMA video via the desk:

- Click on the ‘Preview’ tab of grandMA video to watch the resulting output preview. If you prefer a Fullscreen view, apply the ‘Fullscreen’ button in the toolbar (back with the ‘ESC’ button).

- Select a layer and open the dimmer.
  Now you can fade in the actual selected image for the layer.

- If you want to change the image or video for the layer, scroll through the image selection with the encoder wheel or select the image or video from dialog after clicking on the image entry.



For example if you select the image ‘Dots colored.bmp’ the preview window shows this image.

Now you can test the effects and see how the change of a value on the desk affects the resulting output in the grandMA video preview window.

We will see how this Texture looks on a 3D Object:
Select the ‘Foreground Object’ at the desk:

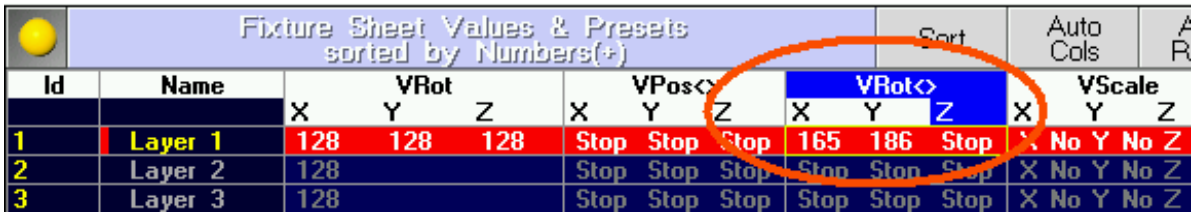
In the next dialog you can select a 3D Object to project onto:

Select the ‘Cross_medium’

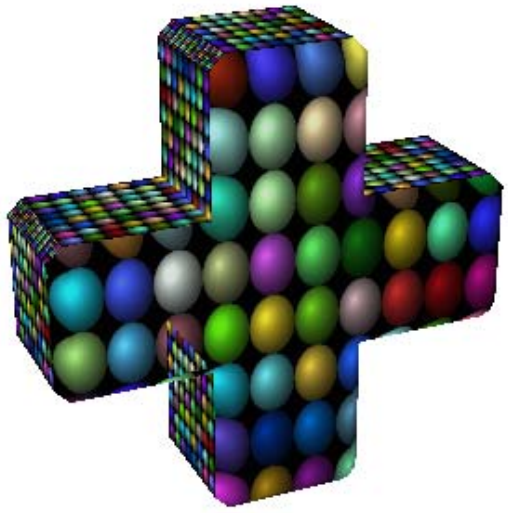
The resulting output in the Preview looks flat, because you are looking perpendicular on the 3D cross.

So let’s rotate the cross:

Therefore enter values unequal to 128 into the Object Animation fields:


Fixture Sheet Values & Presets
sorted by Numbers(+)
Sort
Auto Cols
Id
Name
VRot
VPos<>
VRot<>
VScale
X Y Z X Y Z X Y Z X Y Z
1 Layer 1 128 128 128 Stop Stop Stop 165 186 Stop X No Y No Z
2 Layer 2 128 Stop Stop Stop Stop Stop Stop X No Y No Z
3 Layer 3 128 Stop Stop Stop Stop Stop Stop X No Y No Z

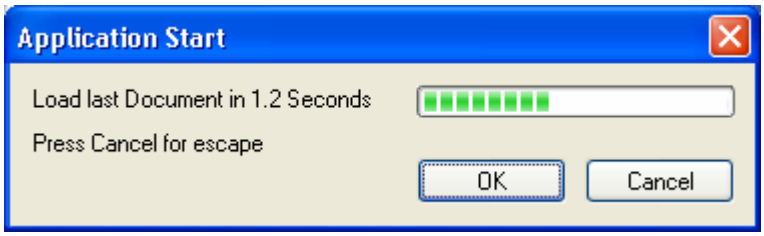
The Result in the Video Preview shows a rotating cross with the new texture:



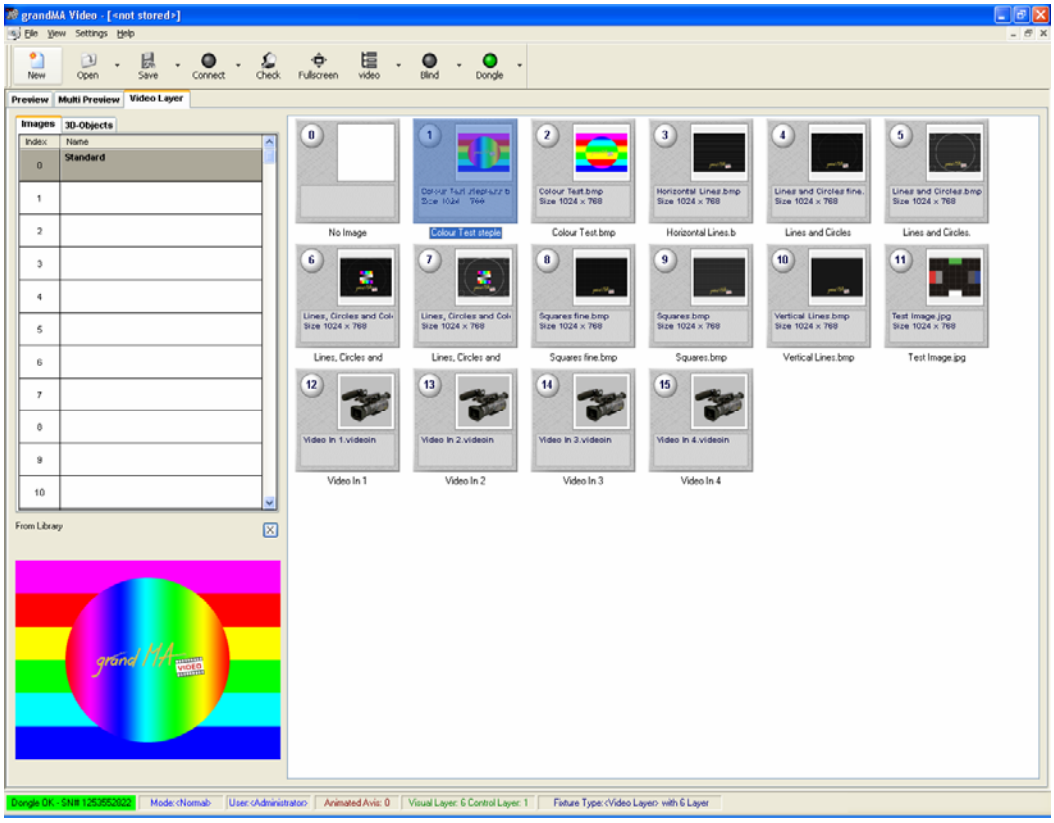
Instead of a simple texture you also can map a running video on the 3D Object.
Feel free and change other parameters.
This is the best way to see how grandMA video works.

9 Program surface

After starting the program, the following dialog will appear on the screen:



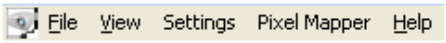
Automatic the last used document will be opened or if you cancel a new, empty document is created. The surface should look like this:



As already known from other applications, the program surface is divided into several parts:

<table>
<tr><td colspan="2">Menu bar</td></tr>
<tr><td colspan="2">Toolbar</td></tr>
<tr><td>Video Layer,
Preview,
Multi Preview,
Pixel Mapper</td><td rowspan="2">Overview window for images and videos of the channel functions or the LED panels in the Pixel Mapper</td></tr>
<tr><td>Preview window for the selected image or video</td></tr>
<tr><td colspan="2">Status Bar</td></tr>
</table>

9.1 Menu bar



Like in several other Windows application you can store and recall files, and adjust the settings of the program:

9.1.1 File...

New: Create a new, empty file
Open…: Open a video show file (.ped).
Export Content and Show…: Exports an .ecd file that contains the show and all included content (videos and images).
Note: The resulting file may be very large because all videos and images are included.
Import Content and Show…: Imports an .ecd file that contains the show and all included content (videos and images).
View Content Export File…: Opens a window with information about the .ecd file.
Save: Save the current file under the given name shown in the title.
Save as…: Save the current show file (.ped) with a new name.
Recent file list: These menu entries represent a list of the files edited previously. A mouse click in that list opens the file.
Exit: Leave the application.

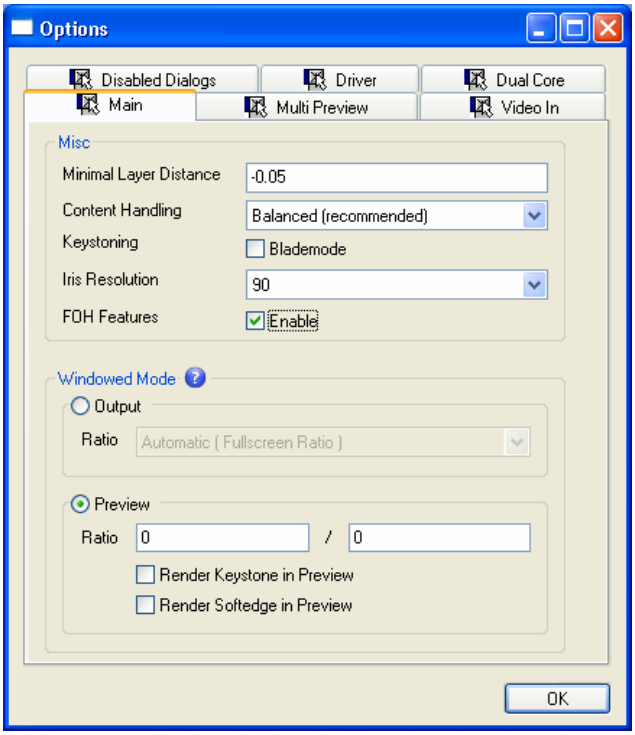
9.1.2 View...

Status Bar: Switches the Status Bar on/off
Standard Toolbar: Switches the Toolbar on/off
System Monitor: Shows a system monitor window

9.1.3 Settings...

Options… Opens a dialog with the following options:

Options Main:



Minimal Layer Distance:
Set the minimum distance between layers (especially for planes) to avoid artifacts. For example if two planes are on the same Level, the images show artifacts because none of them is in the foreground

Content Handling: If you change the content (for example Avi1 => Avi2) the actual output can stop short because the new content has to be loaded. To avoid this, the priority of the render thread can be increased. Certainly the loading time decreases.

Keystoning Blademode: Changes the direction of the keystone edges similar to blades.

Iris Resolution: Resolution of the iris in the Master Layer

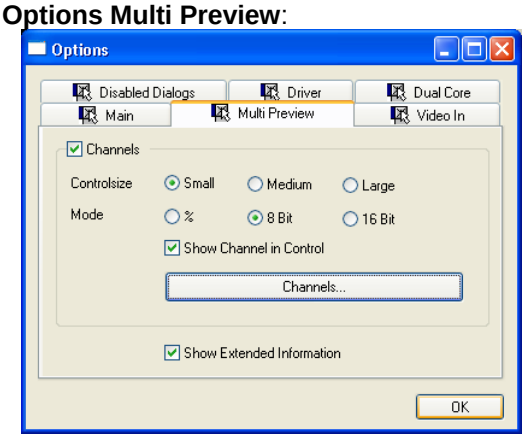
FOH Features: If this button is checked two additional buttons appear at the toolbar.
One button serves the 'Blind Programming' preview.
The other button manages the dongle license that is connected via the Network.
So the use of a multilicence dongle for several applications is possible.

Windowed Mode: Settings for the Preview and Multi Preview

Ratio: Set the aspect ration to
- Automatic (default setting)
- 16 / 9; 4 / 3 etc…
- If the Pixelmapper is enabled the size of the output area can be set here see:13.1.4 Status Bar

Preview: **Ratio:** Setting for the ratio W/H for the Preview windows. Her you have the possibility to generate a complete image if several grandMA video applications generate one image via Softedging.
Render Keystone / Softedge in Preview: In spite of the fact that several grandMA video applications (e.g. at layer 1 and 2) produce one resulting image that is displayed in the preview, the keystone and softedge effects can be enabled in this preview.

Options Multi Preview:



Controlsize: Sets the size of the controls in the 'Multi Preview'

Mode: - % - values in %
- 8 Bit - values from 0…255
- 16 Bit - values from 0…65535

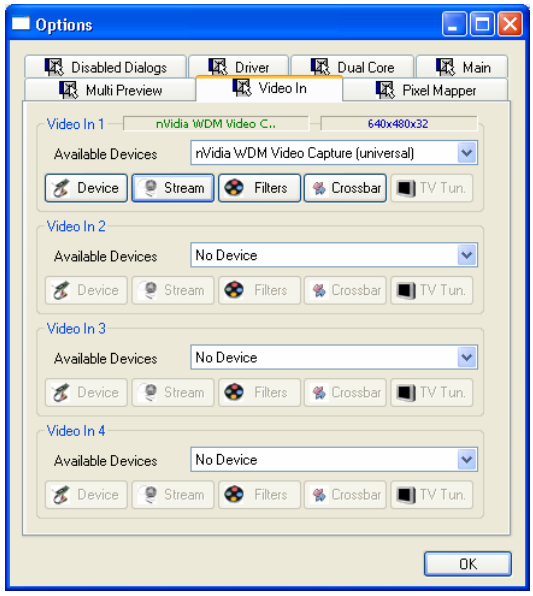
Show Channel in Control: Shows the DMX channel inside the control in []

Channels: Opens a dialog to choose the shown channels

Show extended Informantion: Animates the channel controls if values are changed

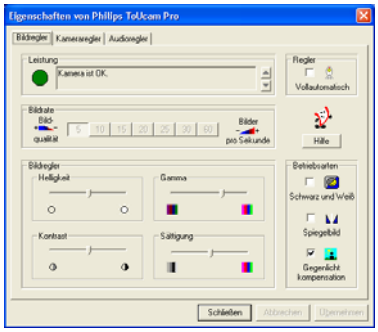
Options Video In:

This interface allows the input of a live video stream. It is realized via the Microsoft Direct Show mechanism.



Video In 1…4:
In this dialog up to 4 different 'Video In' devices can be assigned.
Every Video Capture Device supported by Windows can be used as input source for grandMA video.

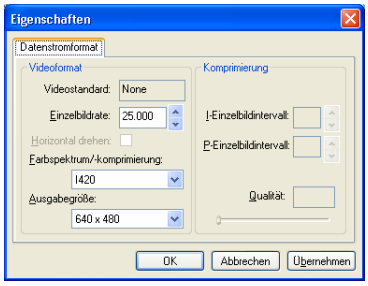
Available Devices:
All recognized Video Capture Devices are listed in this selection bar. By selecting one device this will be assigned to the 'Video In' source and is available for granMA video.



Device…:
If a Capture Device with a driver is installed, its property dialog will be opened after the selection of this button.
In this dialog the device specific properties of the manufacturer can be managed. The following example shows the property dialog of a webcam:

If no device property is available, nothing happens.

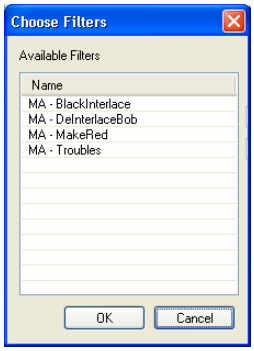
Stream…:



If a Capture Device with a driver is installed, its streaming dialog will be opened after the selection of this button.
In this dialog the device specific streaming properties of the manufacturer can be managed. The following example shows the property dialog of a webcam:

If no device property is available, nothing happens.

Filters…:

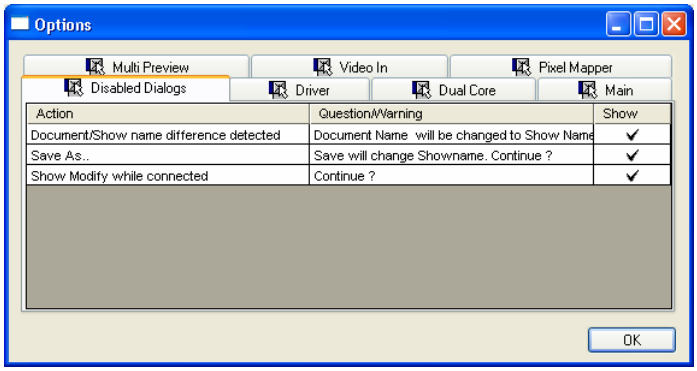


Between Capture Device and the output several filters can be inserted. With these filters the output can be distorted, coloured or deinterlaced.

Note: As a rule these filters are offered by grandma video and the operating system. Also additional Filters of 3rd party providers can be used if they are registered.. (The registration can be done similarly to an OCX with the program regsvr32).

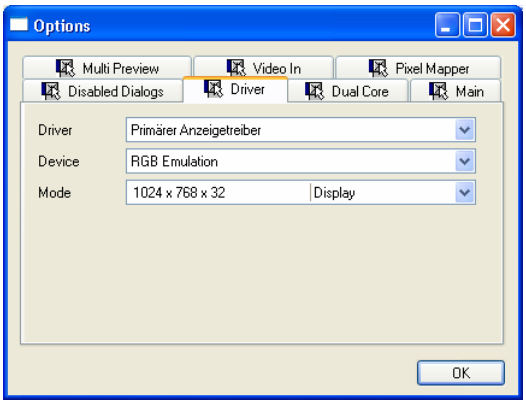
Crossbar, TV-Tuner…: Opens a manufacturer dependent dialog for the installed video in device.

Options Disable Dialogs:



If some dialogs bother you, disable them in this dialog.

Options Driver:

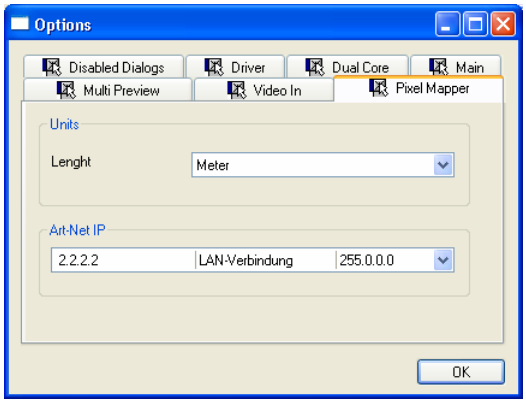


Driver: Select the display driver for the video output. The Default setting is 'Primary Display Driver'

Device:
- HAL (Hardware Abstraction Layer) for the best performance
- RGB Emulation i.e. you can use this if you have trouble with the graphic card

Mode: Select the resolution and the color depth (Width x Height y color depth in bits)

Options Pixel Mapper:
This Option is only visible if the menu entry ‚Pixelmapper' is enabled.



Unit: Unit of the LED panel dimensions and for the configuration of the LED walls in the Pixelmapper

ArtNet IP: Setting of the cofigured IP address (see: 4.6.2Artnet IP Address) for the output of DMX data via the ArtNet protocol within the Pixelmapper.

Show fps: Shows the actual Framerate in '**F**rames **p**er **S**econds' in the output window

Show Video Info (preview/Fullscreen): Display of additional information like a timeline and the actual frame in the 'Preview' and 'Fullscreen View'.

Image/Video Preview: Display of the selected Image or videos in the 'Multi Preview'

Start in Full screen: The application always starts in the 'Fullscreen Mode'

9.1.4 Pixel Mapper...

Enable: Enabling of the Pixelmapper. If this entry is selected, a new tabbed window appears for the configuration and display of the mapped images and videos.
Art-Net Out Mode: Switches to the art out mode like the 'Artnet Out' button in the toolbar.
Show DMX Address: Shows the DMX addresses of the panels.
Show-Grid: Displays a grid.
Show Render Background: Display of the complete image, also the areas that are not covered by LED panels.

Slow Artnet Out while Editing: In the edit mode the Artnet output is slowed down to get a better performance for the editor.
Patch by dropping a new Panel: Opens a patch dialog after the dropping of new panels.
Call Area/Output Editor: Opens a dialog for creating new area/output configurations. In this dialog several configurations for output areas can be definden.

9.1.5 Help...

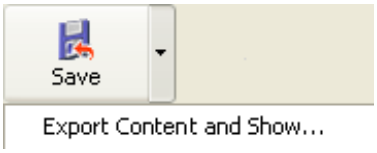
Help <F1>…: Opens the help window.
About…: Shows the about box with the current version number.
In the lower part of the box you can find the license information.
In the about box under the entry 'File' you can find the release notes (Version history).
FAQ…: Opens a document with the **F**requently **A**sked **Q**uestions.
Show Release Notes…: Opens the release notes document.

9.2 Toolbar

The toolbar contains several buttons that are related to the general operations of the program.

New: Create a new, empty grandMA video file

Open…: Open a stored video file (.ped) or import the content and show file (.ecd)



Save: Save the current file under the given name shown in the title.
Note: To reduce the file length the button 'Save' only saves the .ped file that contains the layer setups and the grandMA show.
To save the content too (video files and images) you must choose the 'Export Content and Show' entry. In the upcoming dialog you can choose a filename to save the content and the show in one file with the file extension .ecd.

MA Network… Shows the actual network state or opens the MA Network dialog as described in 6.1 Desk Connection.

Structure Check…Performs a structure check about all resources used in the actual grandMA video show file and shows the results in a dialog. For example if the application has received a setup from the desk but some images are not available on the hard disk you get an error report with the missing images.

Full screen / Artnet Out: Switches into 'Full-Screen' or 'Artnet Out' view. You can also use the 'Enter' key on the keyboard to switch into the full-screen mode.
Leave the full screen mode with the 'ESC' button

Fixture Layer: Selection of the Fixture Layer appropriate to the given name at the desk. If you use different fixture layers you can switch between these layers by selecting the specific layer within the box

The following buttons are enabled if the 'FOH Features' in the Options Dialog are enabled:

Blind: You can take or reject the 'Blind Preview' from the desk by selecting the appropriate check buttons. If the 'Blind Preview is active, the button gets blue. Note: The 'Blind Preview' only can be watched in the 'Preview' not in the 'Fullscreen' mode.

Dongle: You can take or reject the grandMA video license from a dongle that is connected to the MA network. So if you only want to watch the video output in the 'Preview' select 'reject' and you can take the free license for another engine.
- If no license is found the button is red.
- If a license is found and used by the machine the button is green.
- If a license is found and rejected the button is grey.

9.3 Preview

Preview This view offers a preview of the resulting output video.
If you enter the tab, grandMA video receives the commands from the desk and shows the resulting output but in opposite to the Fullscreen view the menus, the toolbar and the status bar are also active.

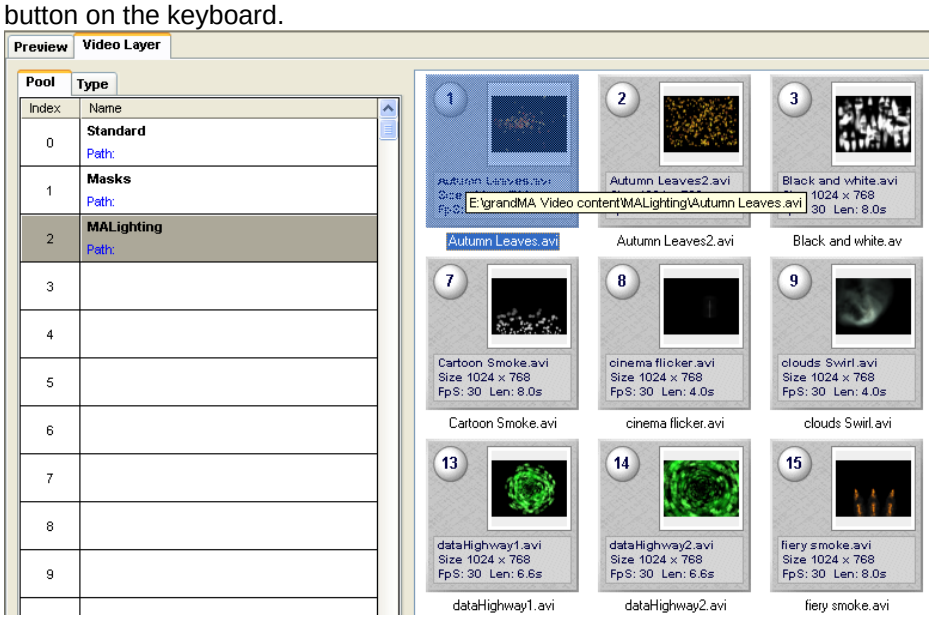
9.4 Layer View or Edit View

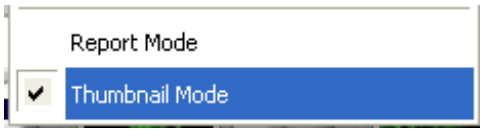
Video Layer In this view you can edit the content (videos and images) and the objects of the layers. Normally all layers of the grandMA video file contain the same content.
By selecting the 'Video Layer" tab this view is activated.

9.4.1 Image Pool (Layer content Images/Videos)

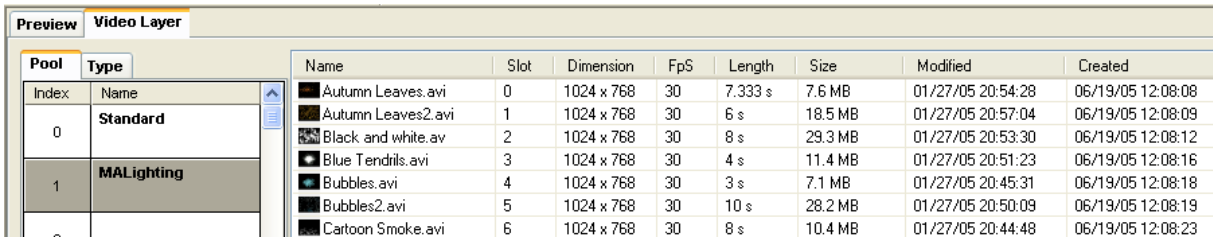
GrandMA video comes with a huge library containing images, gobos and video clips. This content is copied within the installation process into several folders.
Similar to the magazine of a slide projector such a folder behaves like a slide magazine. Up to 255 folders can be assessed directly from the desk. The different images and videos of a folder correspond to the 'Channel Sets' of the desk and can be assessed from there.

Items can be deleted via the context menu with the menu entry of the right mouse button or the 'Del' button on the keyboard.





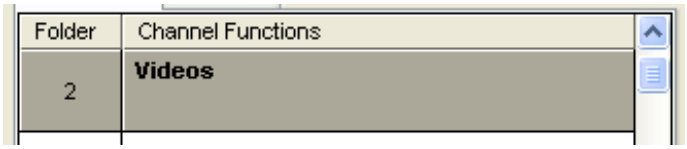
To get more detailed information about the single items you can change the view to the ‚Report Mode' via the context menu with the right mouse button:

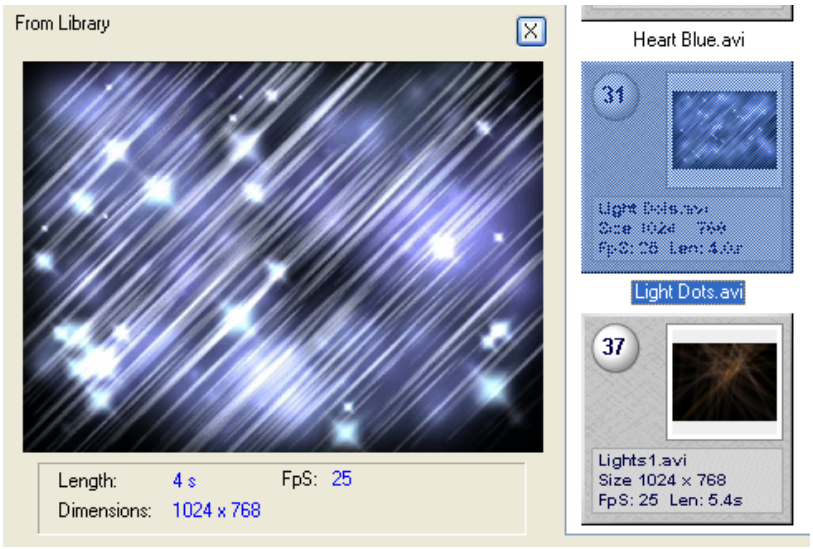


To assign folder to a ‚Channel Function' click with the left mouse button into an empty column. The following dialog appears:

After selecting the entry a browser window appears where you can navigate to desired folder.

After the selection of the folder the name is taken as a name for the ‚Channel Function' as shown in this example ‚Videos'. You can change the name via the context menu with the right mouse button.
The entries ‚Items' of the ‚Channel Functions' can be edited, deleted or renumbered via the context menu with the right mouse button.





Data of the selected item like size, framerate and length are shown below the name of the item.

After the selection of the item its preview is shown in the preview window at the lower left side of the screen.

9.4.1.1 Inserting customized Videos and Images

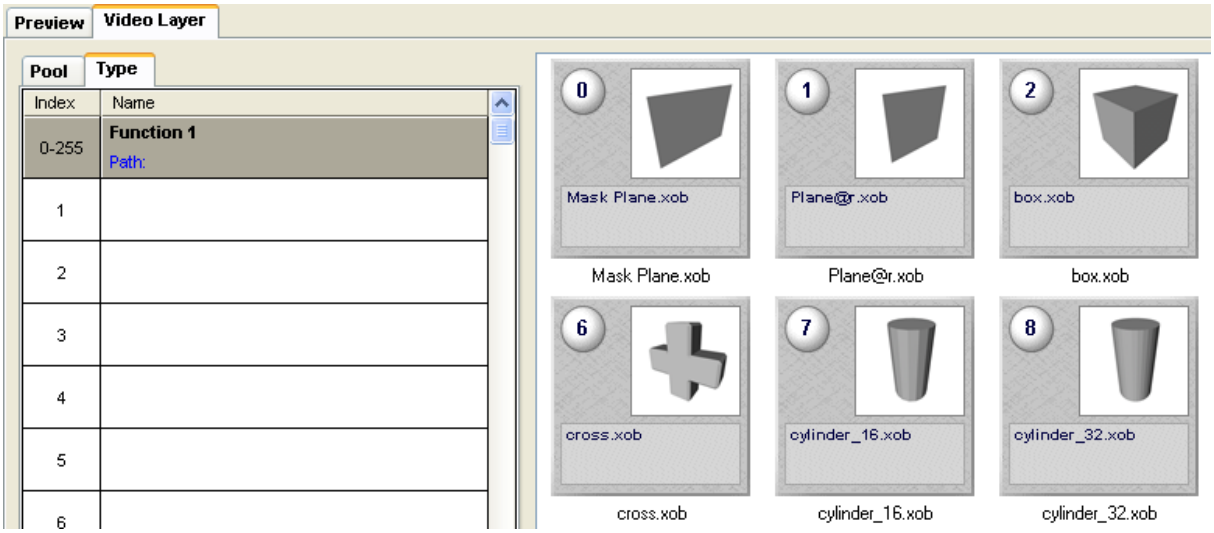
To insert your own images click with the left mouse button into an empty ‚Folder' or ‚Channel Functions' field and navigate in the upcoming dialog to the folder where the images and videos are located. This can be an external drive.
After the selection of the folder and confirming with 'OK' it will take a while until the images are shown because grandMA video has to build a so-called thumbnail (little image) for every item. Therefore each file has to be opened and searched for a usable picture.

Note that the drive and the connection offer the necessary transfer rate to supply grandMA video with data!

Because the presentation area of the images and videos behaves like a normal Windows browser you also can copy the files into the shown directories by dragging them from your file browser and drop them into grandMA video. These images and videos are added to the channel sets.

9.4.2 Layer 3D Objects

The tab ‘Type’ shows the projection objects of the layers.
In the simplest case a layer contains a 2D plane object.
This is a canvas were images or videos are shown like on a TV screen.
But this screen mustn’t be flat. You can use 3D boxes, cones or other 3 dimensional objects to render your images or videos.
You can delete an entry via the context menu with the menu entry of the right mouse button or the ‘Del’ button of the keyboard.



Note: If you use objects with the extension „@r“ like „Plane@r.xob“ the aspect ratio of the object fits automatically to the aspect ratio of the texture (Ratio of width / height e.g. 16/9).
So we recommend using this object (Plane@r.xob) for the easy projection of videos.

9.4.2.1 Creation of customized 3D Objects (.xob)

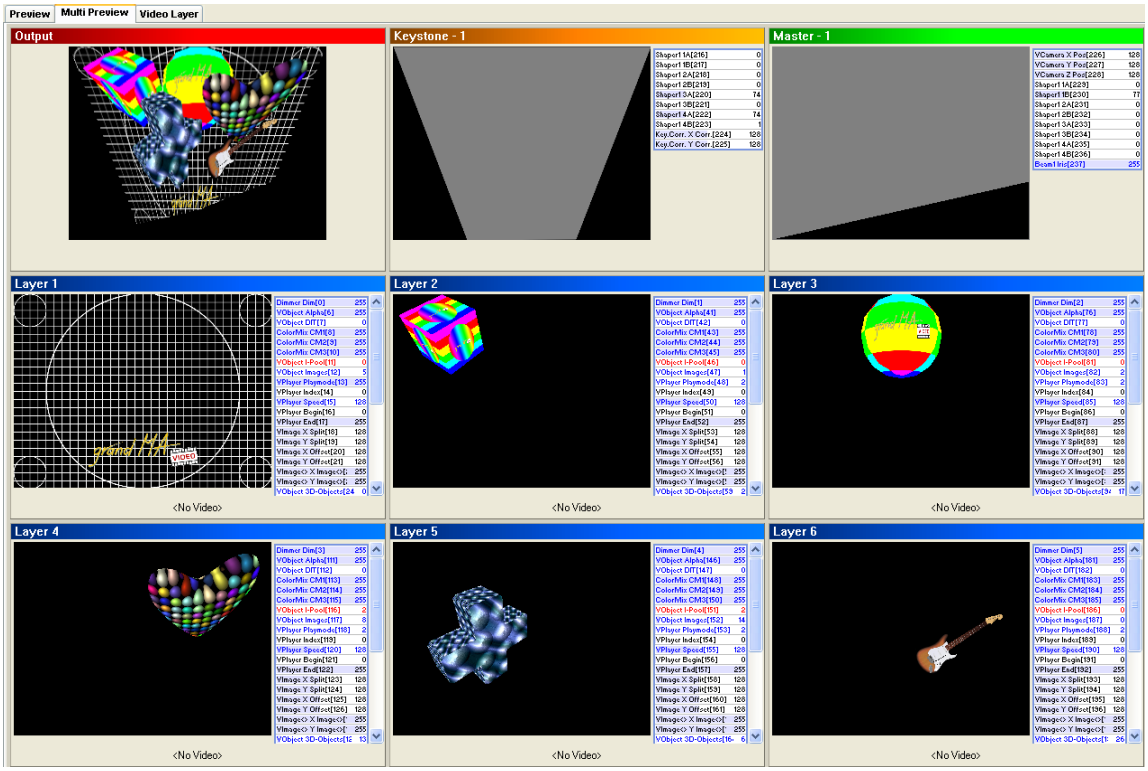
3D objects in grandMA video are defined in a specialized MA format „.xob“. This format can be created with the vizualizer grandMA 3D. grandMA 3D can be downloaded free via the MA Homepage www.malighting.com .
3D objects created with other programs can be converted with grandMA 3D into the .xob format.
Please note, that the amount of polygones affects the performance because for each polygone the projection has to be calculated. The lower the number of polygones the better the frame rate.

- Build your 3D object and export it as „3D Studio Object“ (.3DS)
- Import the object with grandMA 3D vie „File – Import Objects…“
- Export the object by selecting it in the object tree with the right mouse button and then select „Export Object“ within the context menu

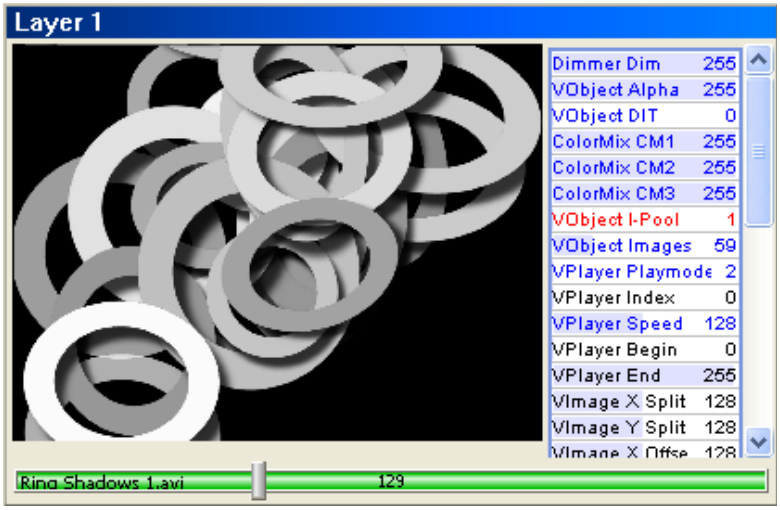
Objects created in this way can be added to the ‚Channel Set’ via the context menu of the right mouse button.

9.5 Multi Preview

This View allows an overview about all layers, their effects and the resulting output:

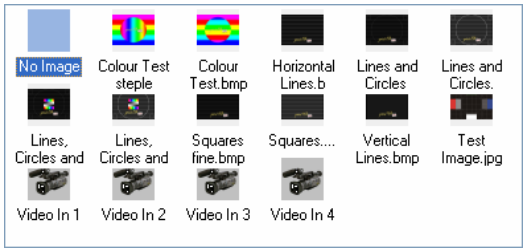


The example above shows all 6 layers with several 3D objects and the resulting output picture. Also the output signal is squeezed in the lower part via the master layer and a shaper covers the lower right part.



The content of each layer is shown in a small window.
The control beside allows to watch and manipulate the effect values.

If a video runs on the layer, a progress bar below the window shows the state, the name and the actual time of the video in seconds.



A mouse click on the effect allows the direct input of values or opens another dialog to select for instance images directly.
For continuous value entries you can hold the mouse button down and change the values by dragging the mouse.

9.6 Fullscreen View

This view uses the full screen to show the video output.
There are several ways to switch into the full-screen view:

- Select the ‘Fullscreen’ button from the toolbar
- Hit the ‚Enter‘ key on the keyboard.

The ‚Enter‘ key switches into the Fullscreen View. ‘ESC’ switches back.

- Use the Master Layer control channel on the grandMA desk to switch remote controlled into the Fullscreen View.

If the application should always start in the Fullscreen View choose the menu entry ‘Settings’ -> ‘Start in Fullscreen’

9.7 Status Bar

The status bar offers an overview about the system status:

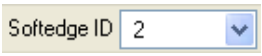
Shows the status and serial number of the dongle

Mode: ‚Blind Programming’ or ‚Normal’

User rights: ‚Restricted’ or ‚Administrator’

Shows the number of animated avis in the current show

Shows the total number of Video Layers



If a show contains more than one Softedge- or Keystone Layer the appropriate ID for this video machine can be selected here.

Example: An image with a resolution of 2000 x 768 pixels has to be projected with two beamers via Softedging. Therefore two images with 1024 x 768 and two grandMA video applications, one for the left, and one for the right image are used.
Both applications use the same show.
The left application uses the Softedge ID 1 for controlling the right side and the right application uses the Softedge ID 2 for controlling the left Softedge side.
Softedge controlling of the left image is done with Shaper 14A.
Softedge controlling for the right image is done with Shaper 12A.

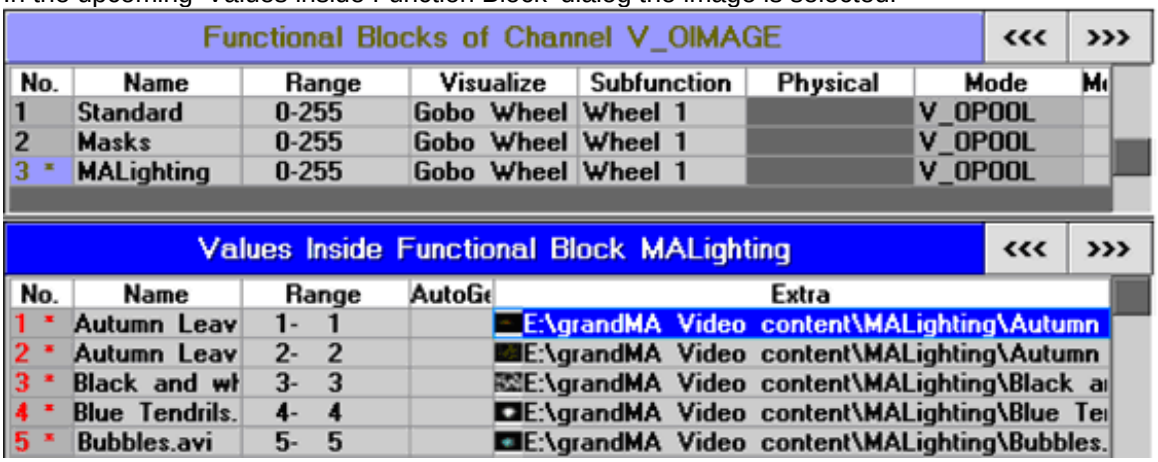
Layer 1 **Layer2**
Shaper 14 A ←→ **←→ Shaper 12 A**

9.8 Managing of video content with the grandMA desk

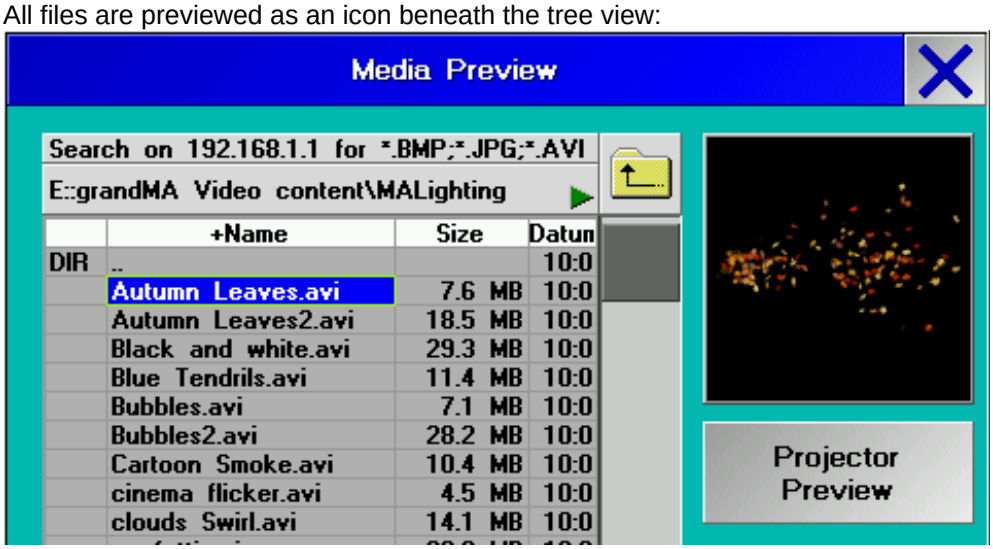
To change the arrangement of images and videos or to change the objects in the Channel Functions you must not even leave the desk place. You can browse by means of the desk surface on the PC hard disk in your directories for images videos or 3D objects and arrange your content in the Channel Sets.

The simplest way to change the layer content is to use the 'Smart' view:

- Push the 'Edit' button at the desk and then the image that has to be changed.
  In the upcoming 'Values inside Function Block' dialog the image is selected.


Functional Blocks of Channel V_OIMAGE
<<< >>>
No. Name Range Visualize Subfunction Physical Mode
1 Standard 0-255 Gobo Wheel Wheel 1 V_OPOOL
2 Masks 0-255 Gobo Wheel Wheel 1 V_OPOOL
3 * MALighting 0-255 Gobo Wheel Wheel 1 V_OPOOL
Values Inside Functional Block MALighting
<<< >>>
No. Name Range AutoGe Extra
1 * Autumn Leav 1- 1 E:\grandMA Video content\MALighting\Autumn
2 * Autumn Leav 2- 2 E:\grandMA Video content\MALighting\Autumn
3 * Black and wh 3- 3 E:\grandMA Video content\MALighting\Black a
4 * Blue Tendrils. 4- 4 E:\grandMA Video content\MALighting\Blue Te
5 * Bubbles.avi 5- 5 E:\grandMA Video content\MALighting\Bubbles.

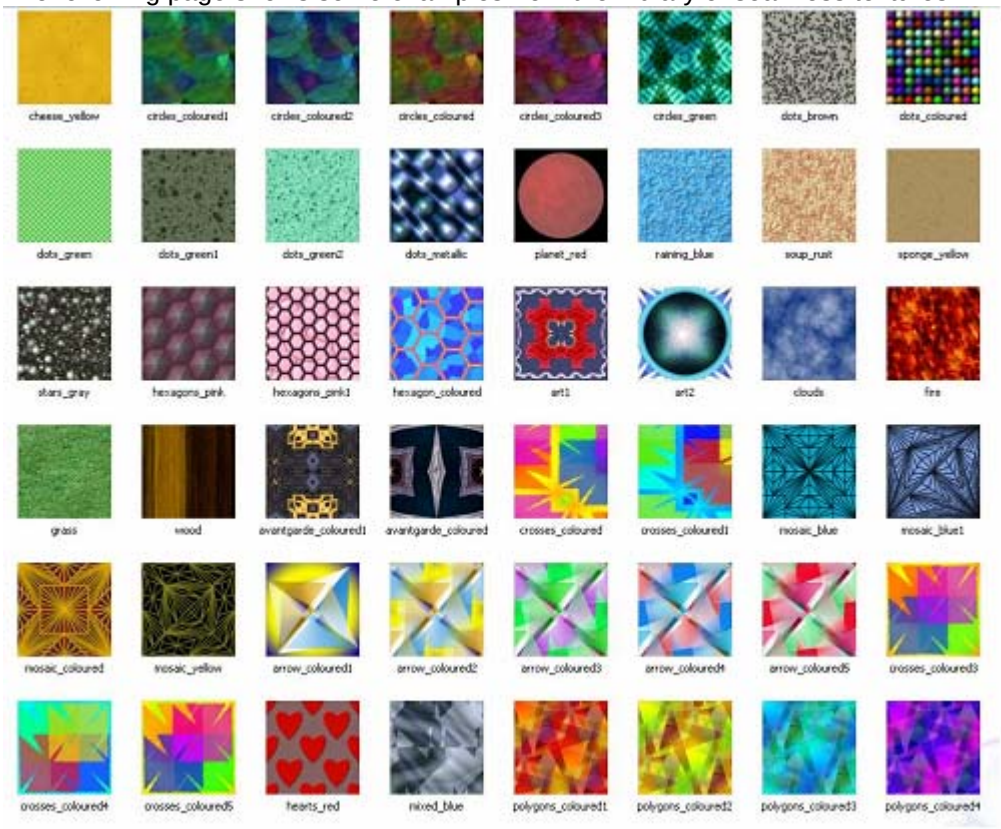
- To browse for a new image push the 'Edit' button at the desk, then select the image that has to be changed at the desk.
  The upcoming window allows browsing for the new entry directly on the PC drive.
  All files are previewed as an icon beneath the tree view:


Media Preview
Search on 192.168.1.1 for *.BMP;*.JPG;*.AVI
E::grandMA Video content\MALighting
+Name Size Datun
DIR .. 10:0
Autumn Leaves.avi 7.6 MB 10:0
Autumn Leaves2.avi 18.5 MB 10:0
Black and white.avi 29.3 MB 10:0
Blue Tendrils.avi 11.4 MB 10:0
Bubbles.avi 7.1 MB 10:0
Bubbles2.avi 28.2 MB 10:0
Cartoon Smoke.avi 10.4 MB 10:0
cinema flicker.avi 4.5 MB 10:0
clouds Swirl.avi 14.1 MB 10:0
Projector Preview

- After selecting the image or video file it is inserted into the layer.

9.9 Video and Image Library Examples

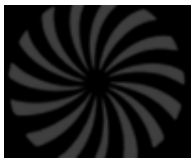
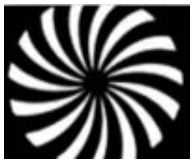
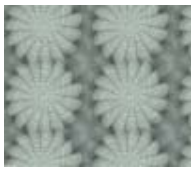
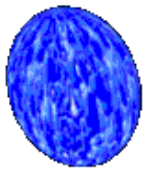
The following page shows some examples from the library of seamless textures:

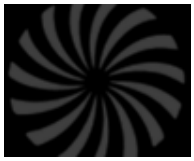
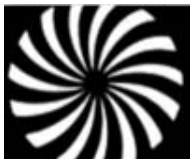
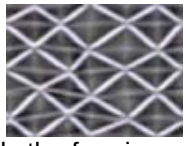
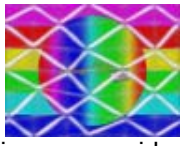
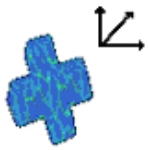
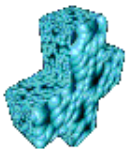
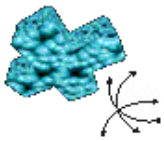
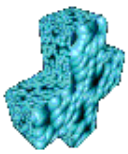
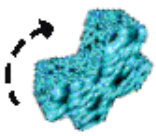


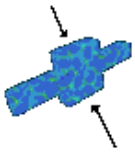
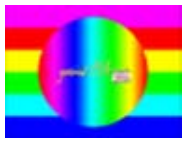
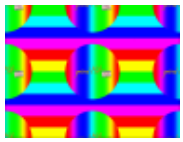
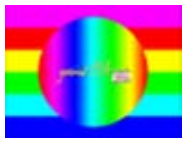
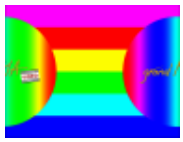
Etc…

10 Effects

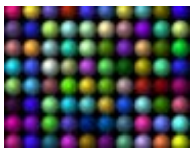
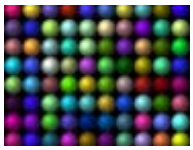
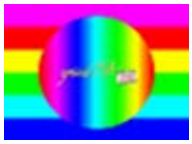
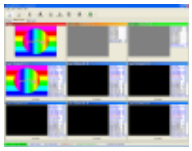
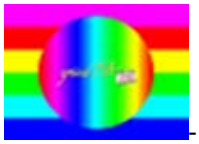
To explain the effect engine it is illustrative to imagine grandMA video as a model of a several movable cameras where every camera looks at a layer object like a 2D plane or a 3D cube.
In these examples an image may be a texture (picture), or an avi.

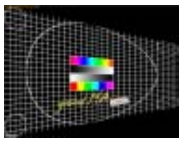
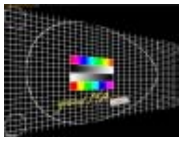
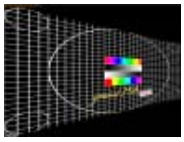
Layer Effects	**Example** with 8bit values 0…255 or in %	
Dimmer	Dimmer **128 (50 %)**	Dimmer 255 **(100 %)**
Dimmer function. To facilitate fading between different layers the dimmer controls the transparency of an object. If the dimmer is 0 the object is transparent and the projection is invisible. If the dimmer is “full” the object is opaque and you can only see the front layer (front Z-position)		
ColorMix (CM1; CM2; CM3)	Color (255,255,**255**)	Color(255,255,**0**)
Tint the output with the CMY(Cyan; Magenta; Yellow) color mixer		
VObject Type	Type **14** (cross_med.xob)	Type **47** (sphere_med)
Select an 2D or 3D object on which surface the to image or video is shown		
VObject Pool	Pool ‚**Standard**’selected	Pool ‚**MA Lighting**’ selected
Selection of the ‘Pool’. One ‚Pool’ can contain up to 255 images or videos		
VObject Image	Image **1**	Image **2**
Choose the image or video from the selected ‘Pool’		

Layer Effects	Example with 8bit values 0…255 or in %	
VObject Alpha	Alpha **128 (50 %)**	Alpha **255 (100 %)**
Control the Brightness of an image or video. In opposite to the “Dim” channel that works on the transparency of the object type this channel works on the brightness of the image or video that is shown on the surface.		
VObject DIT (Dark is Transparent)	Switch is **off** and two images are selected with Dim = 100%	Switch is **on** and two images are selected with Dim = 100%
This switch causes that the black values of the image will be switched to transparent. For example a grey plane will be half transparent if the switch is set.	 Only the fore image is visible	 Both images or videos are mixed
VPosition (X; Y; Z)	X= **50%**; Y=**50%**; Z=**50%**	X=**25%**; Y=**25%**; Z=**25%**
Positioning of the projection object in X; Y; Z - direction		
VRotation (X; Y; Z)	X=40%; Y=**60%**; Z=**50%**	X=40%; Y=**40%**; Z=**40%**
Rotate the projection object around the X; Y; and Z-axis		
VPosition <> (X; Y;Z)	X= **50%**; Y=50%; Z=50%	X= **60%**; Y=**60%**; Z=50%
Animate continuous moving of the projection object in X; Y and Z - direction		
VRotation <> (X; Y;Z)	X= 50%; Y=50%; Z=**50%**	X= 50%; Y=50%; Z=**60%**
Animate continuous rotation of the object around the X; Y and Z - axis		

Layer Effects	Example with 8bit values 0…255 or in %	
VScale (X; Y; Z)	X= 50%; Y=**50%**; Z=50%	X= 50%; Y=**30%**; Z=50%
Scale the dimensions of the object in X; Y ;Z direction		
VImage (Split X; Split Y)	Split **X 0**; Split **Y 0**	Split **X 2**; Split **Y 2**
Split the image or video in X and Y		
VImage (Offset X; Offset Y)	Offset **X=0**; Offset Y=0	Offset **X=50%**; Offset Y=0%
Split offset of the image or video		
VImage<> (X; Y)	X= **50%**;Y=50%;Z=50%	X= **60%**; Y=50%; Z=50%
Animate continuous scrolling of the image or video on the object		
VPlayer Playmode **(**Only for videos)	Frame **100**	Frame **200**
 Frame: Select a single frame picture with the Index channel **Start**: Starts the Video once forward from the beginning to the end **Looped**: Starts the video endless looped forward from the beginning **Back**: Starts the video once backward from the end to the beginning **LoopedBck**: Starts the video endless looped backward from the end **Bounce**: Run forward from the beginning and reverses at the end endless **Stop**: Stops immediately **Pause**: Pauses **Continue**: Continues after Pause (even with Bouncing or Looping)		

The Master Layer, Keystone Layer and Softedge Layer effects manipulate the complete output signal:

Master Layer Effects	**Example** with 8bit values 0…255 or in %	
Master Layer Camera (Pos X; Pos Y; Pos Z)	X=**50%**;Y=**50%**;Z=**50%**	X=**46%**;Y=**52%**;Z=**54%**
All layer views are mixed up to one view for the main camera. This imaginary camera can be moved to show only parts of the whole image. So several applications can be connected together to project a huge image		
Master Layer Shaper (1A; 1B; 2A; 2B; 3A; 3B; 4A; 4B)	1A=**0**; 1B=0; 2A=**0**; 2B=0; 3A=**0**; 3B=0; 4A=**0**; 4B=0 %	1A=**30**; 1B=0; 2A=**30**; 2B=0; 3A=**30**; 3B=0; 4A=**30**; 4B=0 %
With the beam shapers the resulting image can be masked variable with four shapers each with 2 channels		
Master Layer Iris (Beam1 Iris)	Beam1 Iris = **100** %	Beam1 Iris = **50** %
With the Iris function the output picture can be covered wit an iris.		
Master Layer Control (Control)	**Multi Preview**	**Fullscreen View**
The Control channel of the Master Layer is used to switch to the Fullsreen View or to shut down the PC via the desk. These functions are available as buttons in the Smart View.		

Keystone Layer Effects	Example with 8bit values 0…255 or in %	
Keystone Layer Shaper (1A,; 1B; 2A; 2B; 3A; 3B; 4A; 4B)	1A=0; 1B=**0**; 2A=0; 2B=0; 3A=**0**; 3B=0; 4A=0; 4B=0 %	1A=0; 1B=**30**; 2A=0; 2B=0; 3A=**30**; 3B=0; 4A=0; 4B=0 %
All layer views are mixed up to one view for the main camera. Each edge of this view can be moved towards the opposite edge to generate a keystone effect.		
Keystone Layer Key.Corr. (X - Corr.; Y – Corr.)	X Corr. = **0 %**; Y Corr. = 0 %	X Corr. = **75 %**; Y Corr. = 0 %
If a picture is projected distorted on a surface, a perspective correction is necessary to distribute the content on the surface correctly. Therefore the distribution of the picture content can be manipulated in X- and Y-direction.		

Softedge Layer Effects	Example with 8 Bit Values 0…255 or in %	
Softedge Layer (1A,; 1B; 2A; 2B; 3A; 3B; 4A; 4B)	1A=0; 1B=0; 2A=**0**; 2B=0; 3A=0; 3B=0; 4A=0; 4B=0 %	1A=0; 1B=0; 2A=**50**; 2B=0; 3A=0; 3B=0; 4A=0; 4B=0 %
If several projectors should show one common image, the borders must be cross faded. For every border one channel for the position and one channel for the dispensation of the black wedge exists. This example shows a soft edging for the left border of the image.		

10.1 Color keying

This technique makes it possible to draw images with transparent colors.
A Color Key is when you choose a certain color in the image to be transparent.

GrandMA video attaches two conditions to use the color keying technique for an image:

- The transparent color of the image is defined as 255, 0,255 (R, G, B) i.e. you have to paint the transparent areas exactly with this color.
- The name of the image must have the extension “@CK”. For example Mask@CK.BMP.

Note:
We recommend using the .BMP format for color keying images. The compression of other formats may cause fraying effects at the transparent boarders.

The following example shows a typical result of a Color key mixture:

Picture1 (guitar.bmp)	**Picture 2 with Colorkey** (porthole@ck.bmp)	**Resulting picture Picture1 + Picture2**

Additional conditions for Colorkeying Images:

Filename	Consequence
XYZ@CK(AUTO).jpg	Always the color of the first pixel in the upper left corner is taken as key color
XYZ@CK255000255.jpg	The 9 digits after the “@CK” are used as RGB value for the key
XYZ@CK(255,0,255).jpg	The key RGB values are the numbers in ()
XYZ@CK(BLACK).jpg XYZ@CK(WHITE).jpg XYZ@CK(RED).jpg XYZ@CK(GREEN).jpg XYZ@CK(BLUE).jpg	The key is defined as text in ()

Otherwise Value RGB (255,0,255) is the key color for the mask.

11 Softedging

Softedging or Soft Edge Blending is a technique to split a complete picture into several smaller tiles. Therefore the margins of the flanking edges overlap. Inside the overlapping range both images show the same content, but with decreasing brightness to the boarders.
GrandMA video supports this technique for videos and images. This is realized via four controllable grayscales (gray wedges) at the borders of the image. Position and distribution of the grayscale are controlled by the grandMA desk with each two channels:

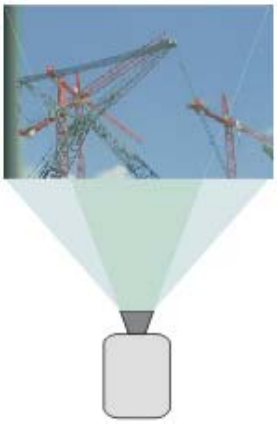
Left Tile

Beamer 1

Softedge ID 1

Softedge controlling of the left image with Shaper 14A ;14B

Right Tile



Beamer 2

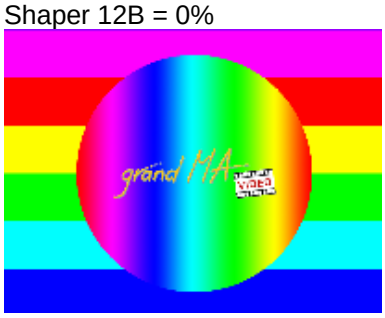
Softedge ID 2

Softedge controlling of the right image with Shaper 12A; 12B

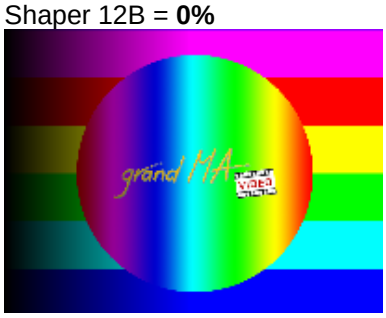
Projection of the complete Image

The following example shows the functionality of the Softedge control channels:

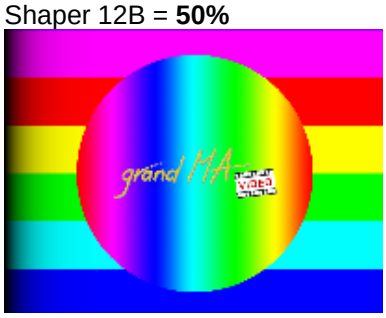
Softedge Layer
Shaper 12A = **0 %**
Shaper 12B = 0%



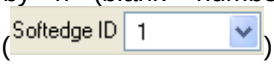
Softedge Layer
Shaper 12A = **100 %**
Shaper 12B = **0%**



Softedge Layer
Shaper 12A = 100 %
Shaper 12B = **50%**



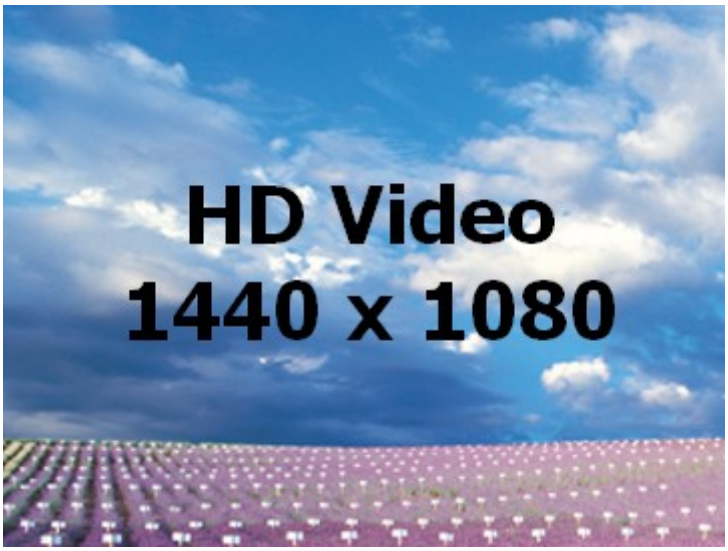
Automatic Selection of Files if the Image or Video is splitted:
Because in case of softedging every beamer only shows a part of the complete image it makes sense to tile the whole image into several single files. So the amount of data can be reduced relevant first of all if a video is processed. For example if a video file is projected with 4 beamers the original data stream can be reduced to ca. ¼ (mind the overlapping borders).
For this case grandMA video offers a functionality for the automatic assignment of the single filenames to the appropriate Softedge layers:
To every softedgeID the appropriate splitted file is assigned by the program. The assignment is controlled by the filenames. For every softedge layer a single appropriate file must exist. The name of

this file must be extended by " n" (blank + number) whereby n is a number that corresponds to the number of the softedgeID (

).
Example:
If the name of the original file is "Flowers.mov" the four applications try to find the files "Flowers 1.mov","Flowers 2.mov", "Flowers 3.mov" and "Flowers 4.mov" corresponding to the four Softedge layers. If the files don't exist, the original "Flowers.mov" will be taken.
This mechanism works for images (.jpg, .bmp…) as well as for videos (.avi, .mov…).

11.1 Example for the Splitting of an HD Video:

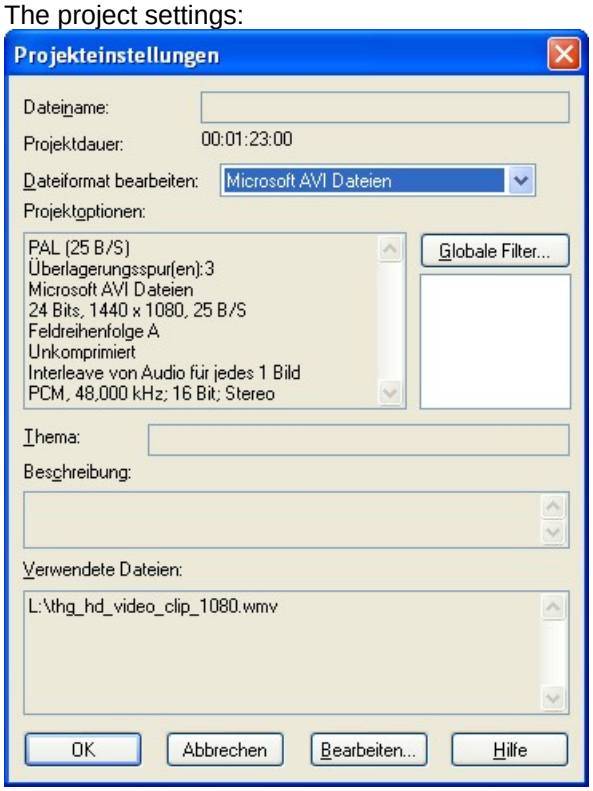
To reduce the amount of data when playing a high resolution video, the staple should be separated into several lower resolved videos.
Example: An HD video is projected with 4 video beamers:



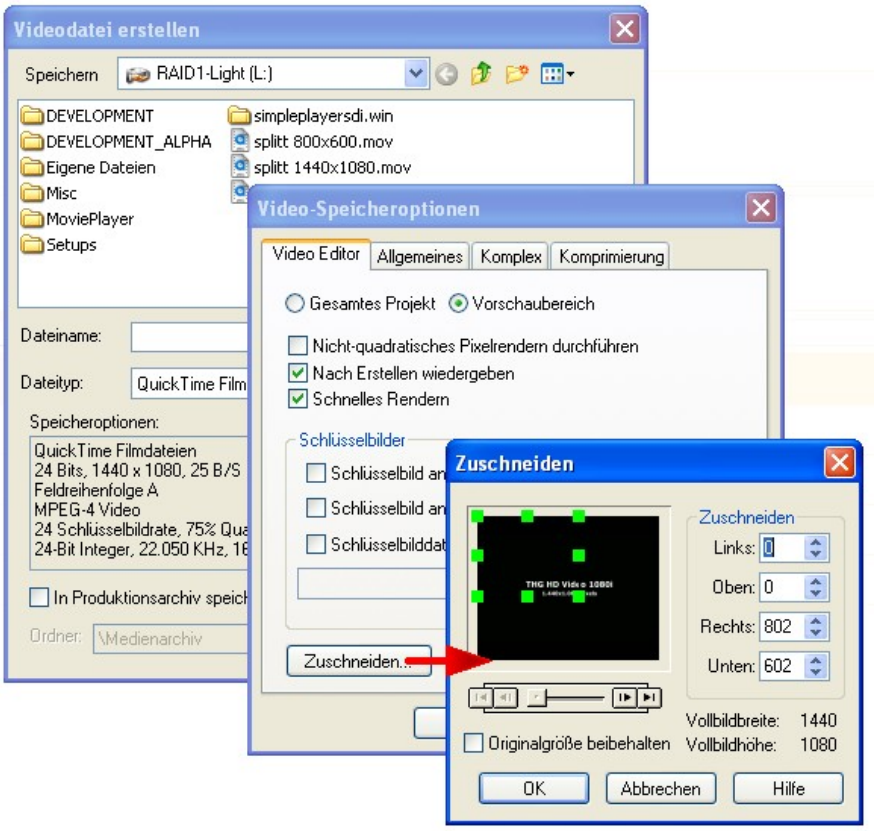
In the simples way we create 4 Softedge Layers, move the cameras to the appropriate tiles and assemble the resulting image via Softedging. This solution will stress the PC with a high data rate of the video file because only approx. 25% of the data is used for every video engine.
So first the video should be separated with a video program into 4 smaller files. Now every video engine can process the smaller video and the data stream will be reduced to a minimum.
The resulting videos now have a resolution of 800 x 600 and overlap by 80 pixels for the X- and 60 pixels for the Y-direction.

11.2 Example for Splitting a Video with ‚Ulead Media Studio Pro 7'

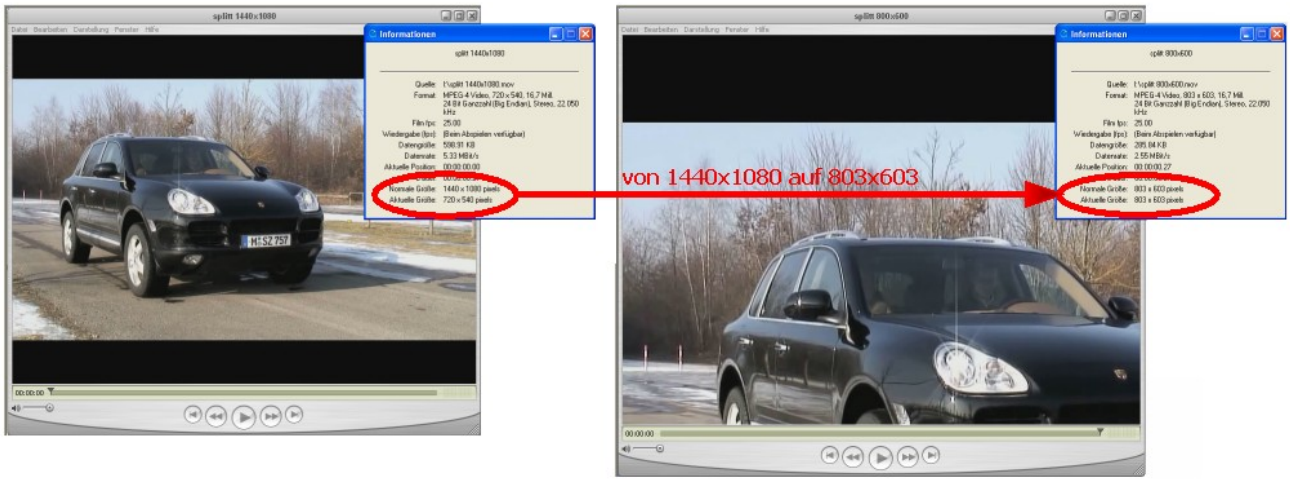
To demonstrate how the splitting of a video file can be done, this example gives a brief introduction by using the video software ‚Ulead Media Studio Pro 7'. Other applications work similar.
(Sorry for the german application surface)
The project settings:



Create video file:



The resulting file is a separate video with the new resolution:



12 Keystoning

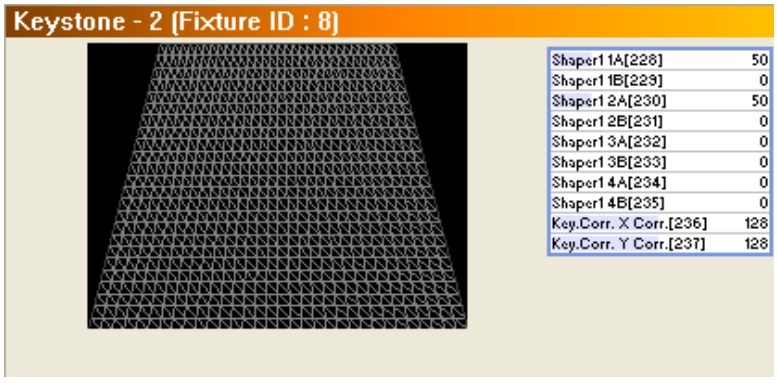
If a beamer projects parallel to the plane of projection, the image is a right-angled plane.
If the beamer is shifted horizontally or vertically the right-angled projection gets trapezoid.
This effect is called Keystoning.

Original image

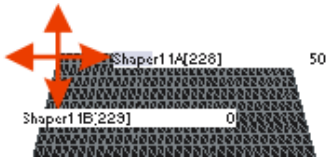
Distorted Projection (tilt upward)

This effect can be minimized by using the Keystone Correction.
Keystone Correction recalculates the image that it is shown right-angled independent of the position of the projector. Therefore the pixels must be compressed and the image is made smaller.
Pay attention, the Keystone Correction always causes a compression of the projected image. This causes a loss of quality of your projection.

This correction is done in the Keystone Layer:



For every edge of the image 1…4 there exist two control channels (Shaper 11A…Shaper 14B). With these channels the edges can be moved in horizontal and vertical direction:



Channels Key.Corr. X and Y are for the distribution of the picture content in X and Y direction.

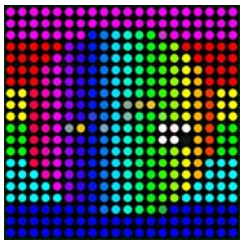
The resulting output image for this distorted Keystone Layer looks like the image beside.

13 Pixelmapper

The Pixelmapper allows the presentation of the video output to a DMX matrix. DMX data are send directly from the grandMA video PC via Ethernet using the Artnet protocol.
The LED wall can be configured individually using several LED panels from different manufacturers. Similar to the desk fixture types the attributes of the LED panels are defined in text files located in a folder of the grandMA video PC. The operating on the desk is analog to the operating of a video wall.

The following example shows a test image mapped on a 20 x 20 LED wall

Test image original

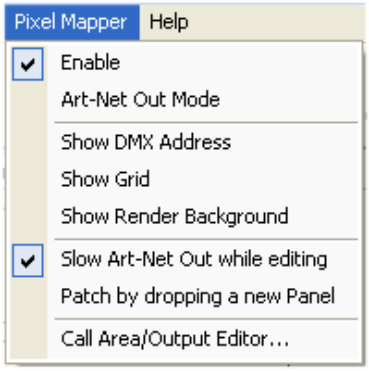


Mapping on a 20 x 20 LED Wall

13.1 Pixel Mapper Operation

13.1.1 Menu

The enabling of the Pixelmapper is done via the menu entry ‚Pixelmapper'.



Enable: Enabling of the Pixelmapper. If this entry is selected, a new tabbed window appears for the configuration and display of the mapped images and videos.
Art-Net Out Mode: Switches to the art out mode like the 'Artnet Out' button in the toolbar.
Show DMX Address: Shows the DMX addresses of the panels.
Show-Grid: Displays a grid.
Show Render Background: Display of the complete image, also the areas that are not covered by LED panels.
Slow Artnet Out while Editing: In the edit mode the Artnet output is slowed down to get a better performance for the editor.
Patch by dropping a new Panel: Opens a patch dialog after the dropping of new panels.
Call Area/Output Editor: Opens a dialog for creating new area/output configurations.

After the activation of the Pixelmapper via the menu entry ‚Pixelmapper – Enable' an extra tabbed window 'Pixelmapper' appears. The general output of grandMA video is done now via the Ethernet protocol Artnet instead of the graphic card of the PC.

13.1.2 Pixelmapper Toolbar

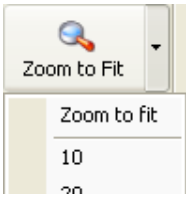
After turning on the pixelmapper, the ‚Fullscreen' button changes his function into **‚Artnet Out' view**. The functionality of the button is analog to the ‚Fullscreen' button i.e. after activation (corresponds, Return' on the keyboard) the monitor shows the general view of all configured LED walls.

An **additional toolbar**, for Pixelmapper operations appears.

If this button is selected, **single LED fixtures** can be selected to arrange them inside the LED wall or show their attributes via a right mouse click.

Multi Create Modus: If a rectangle is drawn up while holding the right mouse button down in the right window, this rectangle will be automatically equipped with the necessary number of the selected panels. See 13.2 Setup of an LED Wall.

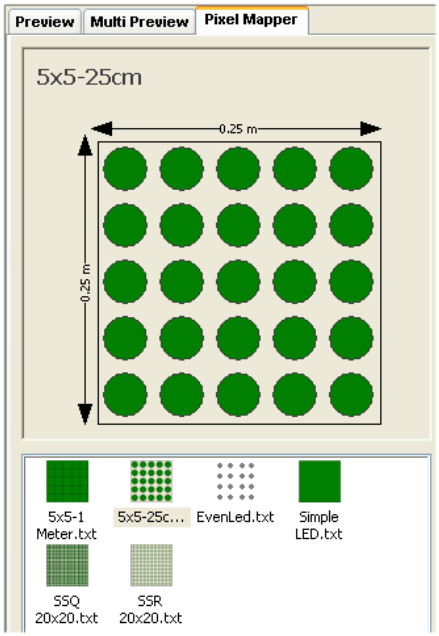
Delete the selected LED panel.



Zoom the right render window to fit.

- **or** individual zoom in % of the original size.

13.1.3 Pixel Mapper Window

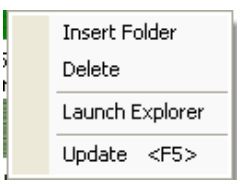


LED Panels are defined similar to dimmer or multi function spots via fixture type text files. These files are located on the video PC in the default path: C:\Programm Files\MA Lighting Technologies\grandMA Video\Data\NEWPANELS

Here the properties of the LED panels are defined as a Fixture Types in single text files (PanelName.txt).

In the left edge of the window all configured LED panels in the default directory are shown.

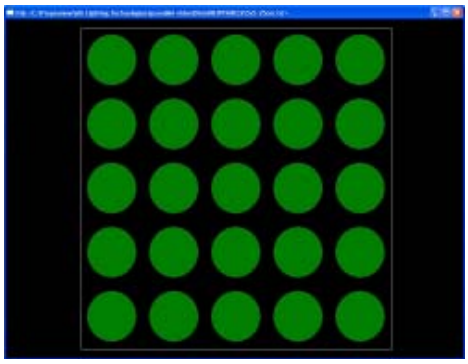
If a panel is selected in the lower part, a detailed view of the panel is shown in the upper part.



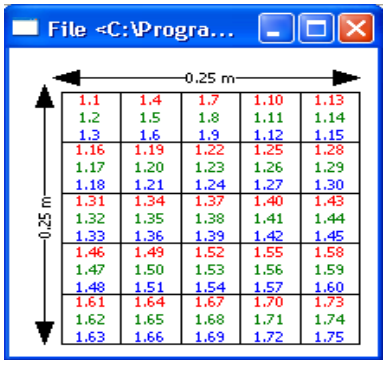
A pop-up menu (right mouse click) offers possibilities for other operations and the navigation.

If an entry is selected in the overview, a detailed view of the LED panel with its measurements appears in the upper picture window. A double click on this view opens another window with an overview about the DMX channels.

Detailed view of the LED Panel:

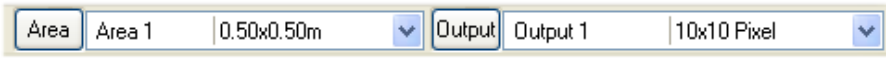


DMX channel allocation of the LED Panel:

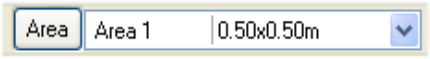


13.1.4 Status Bar

After enabling the Pixelmappers via the menu entry, Pixelmapper - Enable' two additional fields appear in the status bar:



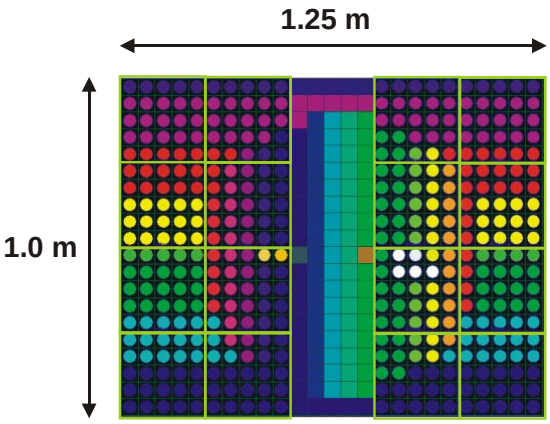
The general output of grandMA video is done now via the Ethernet protocol Artnet instead of the graphic card of the PC. Therefore the physical dimensions of the LED wall (Area) and the number of pixels (Output) can be set:



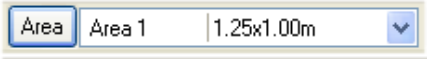
Area: Here the physical width and height of the LED wall is determined. This must not conform to the whole size of the LED Panels. So e.g. only sub ranges of the general view of the LED Panels can be set. The units are set via the dialog of the menu entry, Options – Pixelmapper'.

Output: Mapping of the whole output to the Artnet output range. The output range is defined in n x m pixel.

Example The physical dimensions of the source picture must not confirm to the whole size of the Panels. The LED Panels can picture, for example only a sub range of the whole output.



In this example the output area amounts 1,25m x 1,0 m with 25 x 20 pixel.



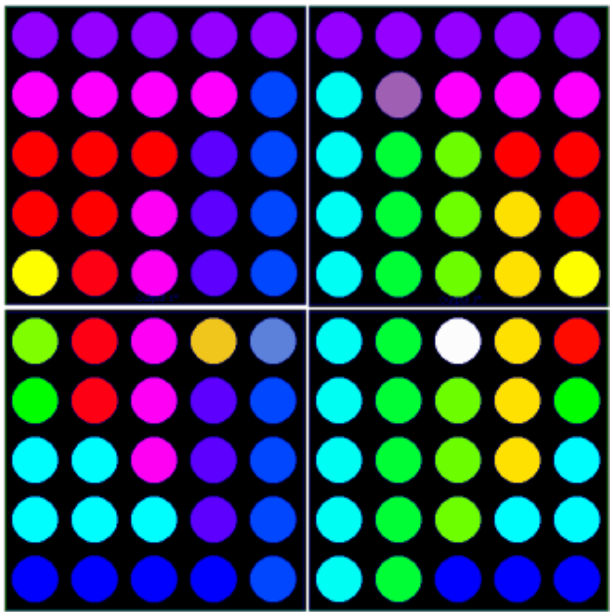
There are used only 16 panels (5 x 5 LEDs). The middle stripe is not equipped with LED Panels and is not used.

13.2 Setup of an LED Wall

An LED wall consists of several LED panels that are arranged in a grid.
The LED wall in the following example exists of 4 5x5 LED panels with 25 RGB canals each.
Therefore every panel needs 25 x 3 = 75 DMX channels.
In the example each panel is assigned to an own DMX universe.

Panel 1:
Universe 1
DMX Chan. 1…75

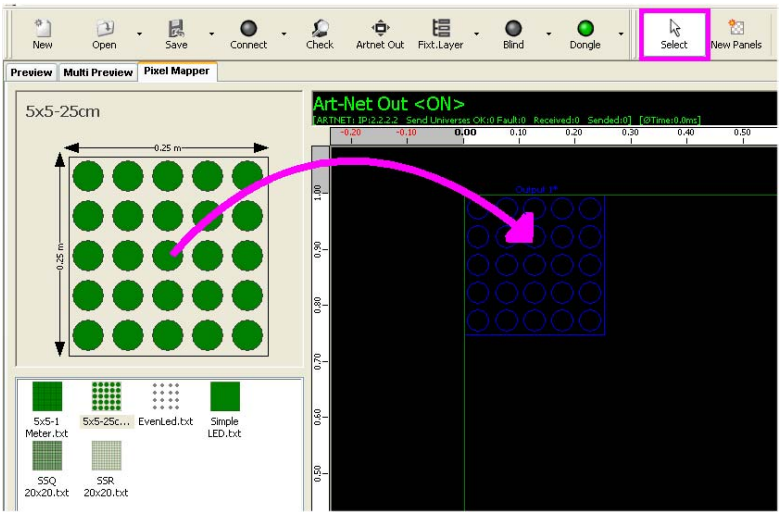
Panel 2:
Universe 2
DMX Chan. 1…75



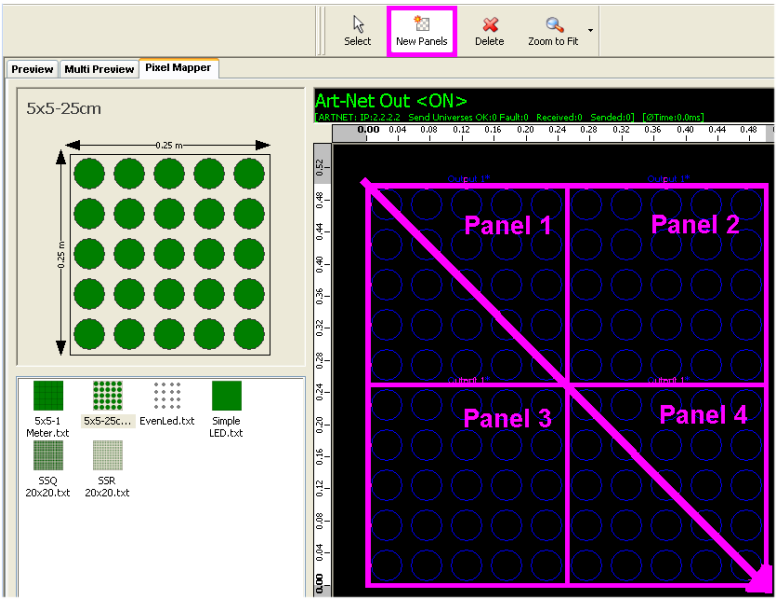
Panel 3:
Universe 3
DMX Chan. 1…75

Panel 4:
Universe 4
DMX Chan. 1…75

To configure the LED wall there are two possibilities:



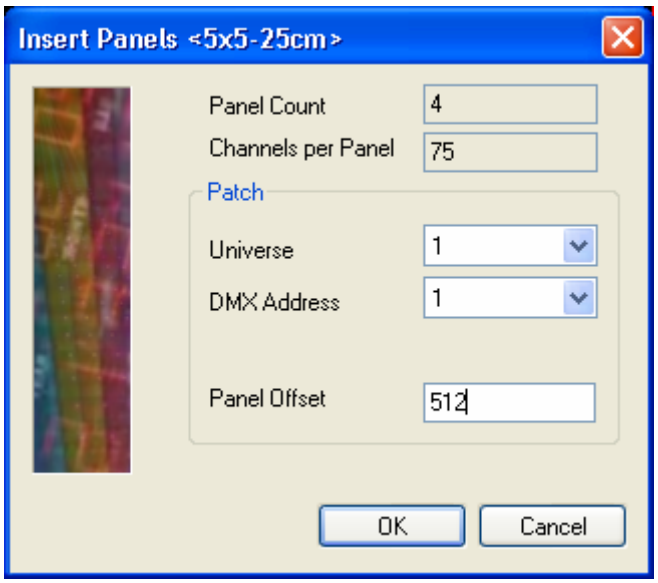
Pull the wished LED Panel from the left field holding the left mouse button down into the output area.



Or choose the button ‚New Panels' in the tool bar and draw a rectangle while holding the left mouse button down. Draw from the upper left down to the lower right corner diagonally. The area will be filled automatically with the necessary amount of panels.

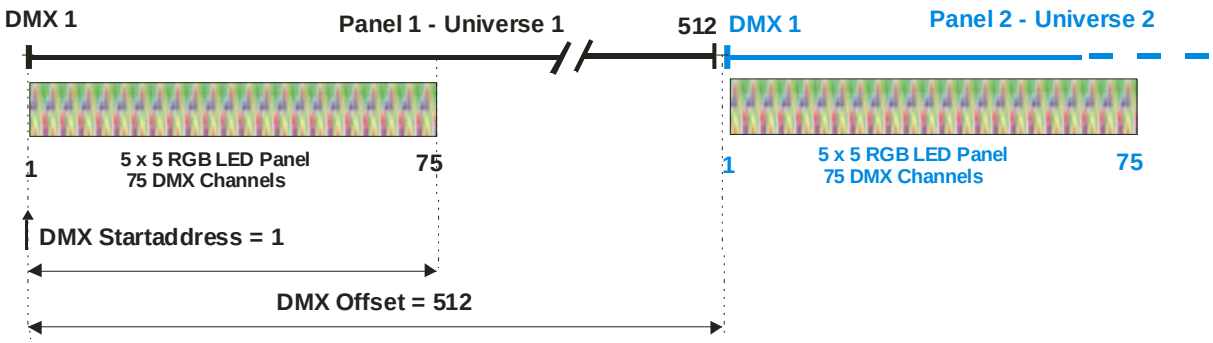
After lifting the mouse key you are requested to patch the panels. This happens in the following dialog:

For each panel a DMX university, a start address and an offset to the next DMX address must be assigned:



Panel Count: Number LED panels
Channels per Panel: Number of the DMX channels per panel
Universe: Address of the first DMX universe for patching
DMX Address: DMX start address of the first panel
Panel Offset: Distance between the start addresses of the single panels.
For example: With the offset of 512 for each panel a new DMX universe is taken. This happens because the DMX universe range reaches from 1 to 512.

The following example shows the distribution of the DMX addresses on the DMX universes:



13.3 File Format of LED Panels

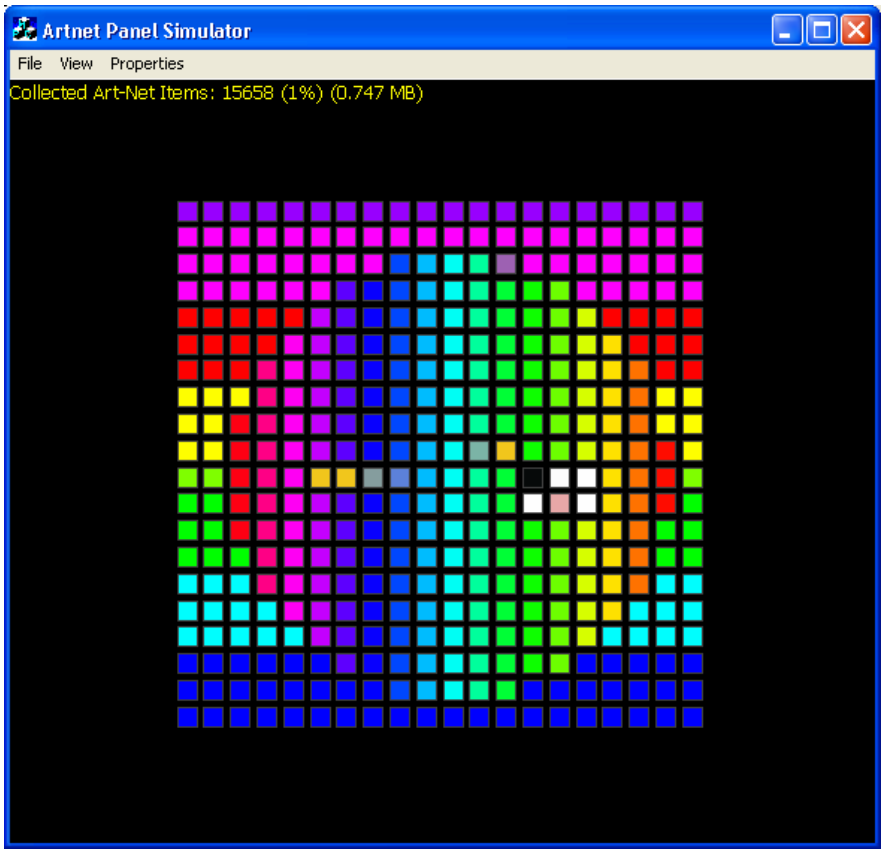
The properties of an LED panel are specified in a text file e.g. „5x5-25cm.txt“. This text files are located in the folder:
C:\ProgramFiles\MA Lighting Technologies\grandMA video\Data\NEWPANELS
Parallel to the text file exists a bitmap (.bmp) with the same name in the folder for the visualization.
The file construction is similar to the fixture description file of the desk.
The LED panel file describes the physical dimensions of the panel, the optical visualization and the dimensions of the
LEDs as well as the DMX channels and the patching order.
The file is structured hierarchically as a tree with single blocks. The blocks are described within {}.
They contain tags (Keywords or marks) beginning with a '_'. A tag is followed by a set value.

Block	Tag Name	Description	Sample
_LEDTYPE {			
	_NAME	Displayed title of the LED Panel as text	5x5-25cm
	_PHYS_WIDTH	Physical width of the panel in cm	25.0
	_PHYS_HEIGHT	Physical height of the panel in cm	25.0
	_PHYS_WIDTH_LED	Physical width of one LED in cm	0.4
	_PHYS_HEIGHT_LED	Physical height of one LED in cm	0.4
	_LED_IS_ROUND	Flag for the visualization of the LED appearance (0 = false; 1 = true) Other appearances may follow. At the moment only circular or square.	1
_LAYOUT {	_COLS	Amount of LED columns	5
	_ROWS	Amount of LED rows	5
	_DELTAX	Counting direction for patching: 1 – left to right -1 – right to left	1
	_DELTAY	Counting direction for patching: 1 – top down -1 – down to top	1
	_DIRECTION	Patch order: 0 – first X then Y 1 – first Y then X	0
}	_MEANDER	Not supported yet	0
_CHANNELS {	_REPEAT	Count how often the following value is repeated. (Here Value = LED_UNIT 25 times)	25
	_VALUE	Patch rule for channel or following tag that is described in the following: While patching this list is processed. For each detected _VALUE = LED_UNIT a new LED_UNIT is inserted. The amount of '_COLS' multiplied with '_ROWS' complies with the number of 'SUBBLOCK' entries. If _VALUE = NONE there is an DMX gap.	LED_UNIT or NONE
}			
_LED_UNIT {	_VALUE	Function description of the channels. Valid values: CYAN, MAGENTA, YELLOW, RED, GREEN, BLUE, WHITE	RED
	_VALUE		GREEN
}	_VALUE		BLUE
}			

13.4 Artnet Panel Simulator

The Artnet Panel Simulator is a useful tool to visualize date received via Artnet as an LED panel.
The Panel Simulator is copied with the installation program into the following directory:
C:\Program Files\MA Lighting Technologies\grandMA video

If you need this tool more often, draw a shortcut on your desktop by dragging it on the desktop holding the right mouse button down.
The program can be started by a double click:



Artnet Panel Simulator

Visualization of grandMA video data received via Artnet. This shows a simulation of a 20 x 20 pixel LED panel with squared LEDs.

The program visualizes data received via Artnet after the start like an LED panel. The properties of the panels are described in the chapter above (13.3 File Format of LED Panels).

The parameterization of the program is done via the menu entries:

File: File Open… - Selecting of the LED panel description file (xxx.txt).
These files are located at: C:\Program Files\MA Lighting Technologies\grandMA video\Data\NEWPANELS

View: Artnet Receive Grid – Representation of the received data in a grid
Panel Visualizer – Representation of the received data as LED panel

Properties: Options – Setting of the Artnet IP address as described in 4.6.2 Artnet IP Address

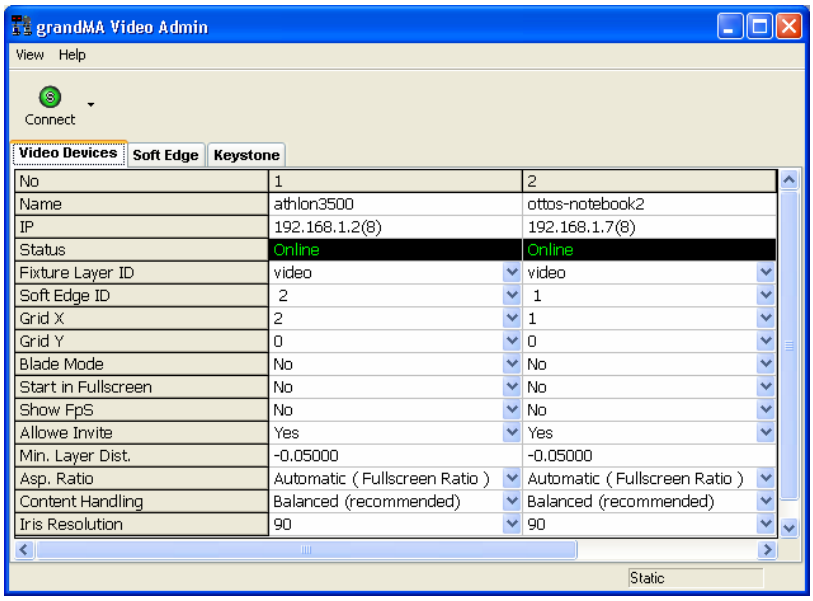
14 grandMA video Admin (Video Controlling - Application)

This additional application is installed also with the grandMA video installation package. All grandMA video detected inside the MA Net can be controlled centrally via this program.

On starting the application it is checked if a video session is found inside the MA Net. If a session is found, grandMA video Admin joins as slave. All identified video devices are listed in a grid view. The most common settings of the video devices can be controlled from here.

14.1 Video Devices Settings

The following example shows two video applications found in the MA Net and their settings:



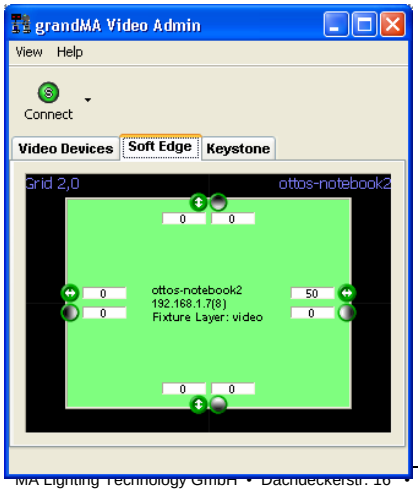
No	1	2
Name	athlon3500	ottos-notebook2
IP	192.168.1.2(8)	192.168.1.7(8)
Status	Online	Online
Fixture Layer ID	video	video
Soft Edge ID	2	1
Grid X	2	1
Grid Y	0	0
Blade Mode	No	No
Start in Fullscreen	No	No
Show FpS	No	No
Allowe Invite	Yes	Yes
Min. Layer Dist.	-0.05000	-0.05000
Asp. Ratio	Automatic (Fullscreen Ratio)	Automatic (Fullscreen Ratio)
Content Handling	Balanced (recommended)	Balanced (recommended)
Iris Resolution	90	90

If you are in an MA session (Connect LED is green:

) and change the settings of one or more parameters the changes work directly on the grandMA video machines and the master of the session (normally the desk).

14.2 Softedge Settings

Controlling of the Softedge parameters takes place on the following page:

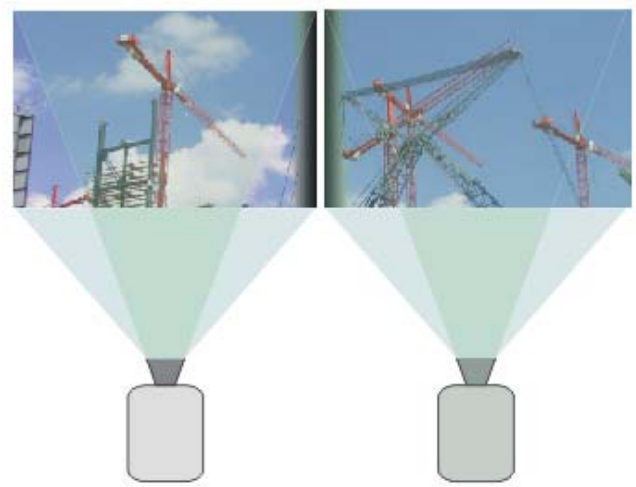


With the first start of the application all located Softedge Layer are presented one upon the other.

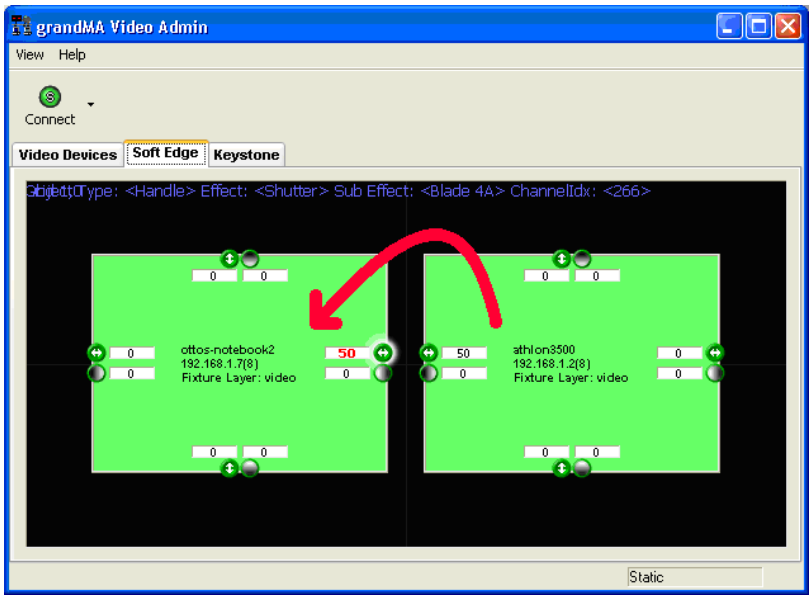
- First arrange the Layers in that way as the projectors are arranged in reality.
- Therefore drag the Layer (green rectangle) by pushing the left mouse button down and drag it to the desired side, depending on what side the projector shows its image in reality.

Now the Softedge Parameter can be controlled via the mouse.

The following example shows the settings for a softedge projection with two video beamers when the overlapping edges are dimmed with a greyscale:



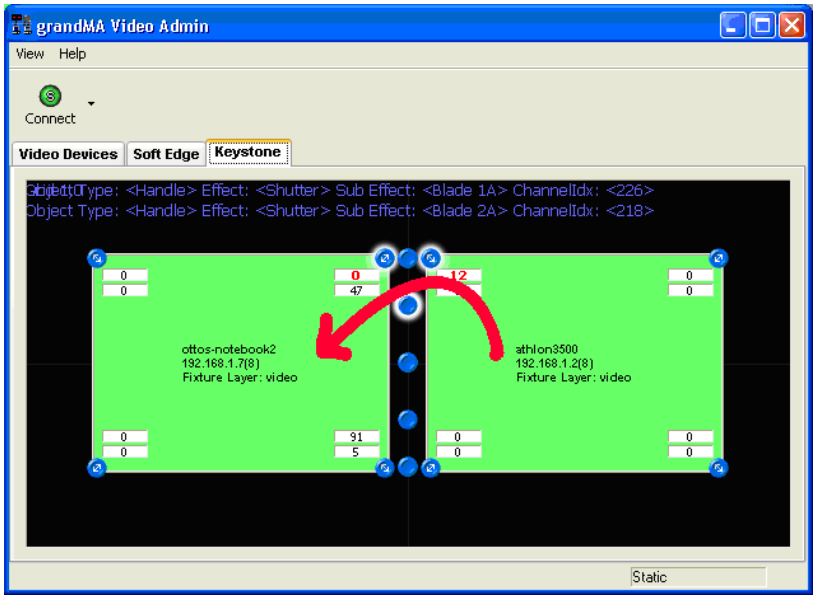
To control these settings the layers must be arranged side by side in the admin application. Therefore drag the left layer by holding the left mouse button down beneath the right layer:



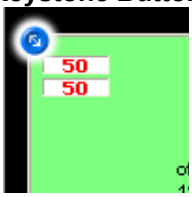
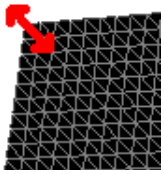
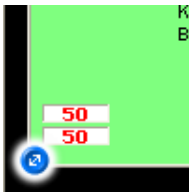
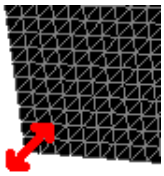
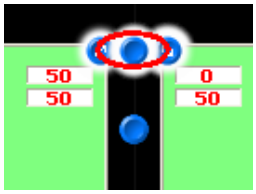
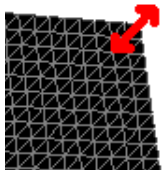
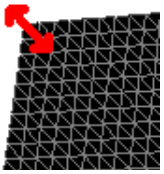
The softedge borders of the overlapping ranges can be controlled for every beamer with the mouse via the ⇔buttons.
The grey button below this serves the distribution of the greyscale. While moving the mouse the result can be checked directly at the projection.

14.3 Keystone Settings

Analog to the softedge settings the admin application also controls the keystone settings centrally. To control these settings layers must be arranged side by side inside the grandMA video application. Therefore drag the layers holding the left mouse button down and drop them to the right position:



Now the keystone settings for several projectors can be controlled simultaneously via the blue buttons . While running over the button with the mouse the involved channels are marked red: . The activity of the button is signalized by a bright fringe:

Keystone Button	Effect	Description
		Simultaneous movement of the upper left edges in X- and Y-direction.
		Simultaneous movement of the lower left edges in X- and Y-direction.
	Layer 1	Layer 2
		 Simultaneous movement of the adjoining edges in X-and Y-direction on both keystone layers.
		Simultaneous movement of both boarders in X- or Y-direction on both keystone layers.

15 Keyboard Shortcuts

The common shortcuts:

View	Key	Function
Edit / Preview	Enter	Fullscreen Mode
	Shift + l. Mouse	Select several objects from the first selected to the last
	Ctrl + l. Mouse	Add object to the selection with the mouse
Fullscreen	ESC	Leave Fullscreen view

Please note, that possible installed drivers for example for graphic cards affect the keyboard shortcuts as well.

16 FAQ and Troubleshooting

Should you have any problems with the application, you can refer to the frequently asked questions below:

16.1 Software Questions:

Nr.	Question	Answer
1.	problems with the communication PC <-> desk	Check the TCP/IP settings: - Is a network card installed? - Is the TCP/IP protocol configured? - The TCP/IP subnet mask of the PC must be equal with the subnet mask of the desk for example 255.255.255.0 - The first 3 numbers of the IP address of the PC must be equal to the first three numbers of the desk for example: PC: 192.168.0.10 Desk: 192.168.0.5 - The last number of the IP address must be unique in the complete network. - Please don't use the automatic distribution of IP settings as offered by Windows because this IPs doesn't fit the requirements.
2.	Two network cards installed – no communication with the console	Select the IP address belonging to the network card attached to the grandMA desk. See: 6.1 Desk Connection
3.	Cannot find the connected grandMA desk	Check the IP Settings. See: 6.1 Desk Connection
4.	Video codec's	Recommended Video Codec's: At the moment we get the best results with the "Cinepak" or the "MPEG2" codec. Generally if a video a can be shown with the QuickTime Player it also can be shown with grandMA video. Additional codec's are available at: http://www.apple.com/quicktime .
5.	Fullscreen mode does not work	The "Fullscreen" mode requires the dongle.
6.	Fullscreen shuts off	Disable the screensaver and power management
7.	Firewalls and Antivirus Software. Program won't start or PC looses connection	The MS firewall that comes with SP 2 makes no problems. After the installation you must allow grandMA video and onPC the access to the network. Third party firewalls and anti virus software must be configured. If this doesn't help, the programs have to be disabled or de-installed. Note that in this case the virus protection etc. doesn't work. (To configure your firewall enable the Remote Call TCP Port 7003 in your Firewall Options)
8.	Bad Performance	Disable virus checks on the content files like .AVI; .IMG or .MOV files!
9.	Content Browsing from desk doesn't work	Check the IP-address (same subnet!) and configure or disable the firewall. Properties of Hardware Interface - disable Checksum Offload in the advanced Setting of the Network Adapter.
10	Black output screen	- May be your graphics board has too less memory (64 MB or less) and you are using a high display resolution (e.g. 1400 *1050).

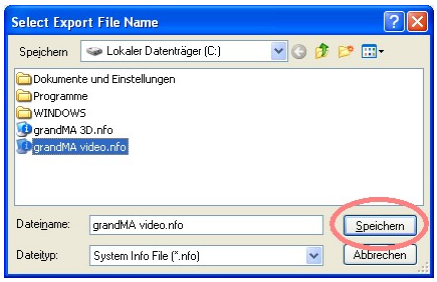
		Reduce the screen resolution. - DMC channels are not patched - No Output without Desk" Flag is checked - Dimmer, Grandmaster, Blades closed - 3D Object moved out of focus or wrong scaled - Keystoning parameter stupid - No valid Fixture Layer - Output device (for example a Beamer) doesn't support the high resolution
11	Video Capture Cards: The Decklink Blackmagic SDI Capture Cards can support two SDI Inputs. Does this work with grandMA video?	If the card works with the Windows Direct Show this should work. We have tested the small SDI-In card and the PCI Express Extreme. Here we only have the possibility to choose one video (from the Decklink driver) – As mentioned, if there is a card that supports two interfaces via the driver we'll support this.
12	Is the smallest Blackmagic SDI Capture card sufficient, I mean the card that does not support HDTV ?	See 11
13	PCI or PCIe SDI capturing? The bus type is irrelevant?	Yes
14	No administration rights	To work with grandMA video without administration rights you have to arrange the administration rights by the administrator on the installation path e.g.: C:\Program Files\MA Lighting Technologies\grandMA video
15	System crashes or stocks	The Widows XP Service Pack 2 must be installed
16	Problems with content browsing via the desk	Open the properties of the network card settings: and set "Rx Checksum Offload" to "disable" (default = enable)
17	Video cannot be shown	Maybe codec problems see: "4.3 Installation of the MPEG2 Codec". Not all available codec's are installed per default with the Quick Time Player installation.
18	Timing problems with Dual Core processors	The use of Dual Core processors can cause timing problems. Please use the actual drivers of the processor manufacturer. If you have further problems set the switch via the menu entry ‚Settings – Options – Dual Core'.
19	Aspect Ratio of the output image is wrong	The aspect ratio can be set via the menu entry ‚Settings – Options – Main – Output Ratio'. The setting ‚Automatic' is recommended. To play a simple video file on a screen you should use the layer object "Plane@r.xob". Objects with the ending ‚@r.xob' adapt automatically to the aspect ratio (Ratio of width / height e.g. 16:9) of the used image or video.

16.2 Export System Information

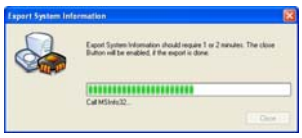
To facilitate service inquiries we need specific information about your system configuration.
This information can be provided via an information file as follows:

Press the‚Check' button in the toolbar

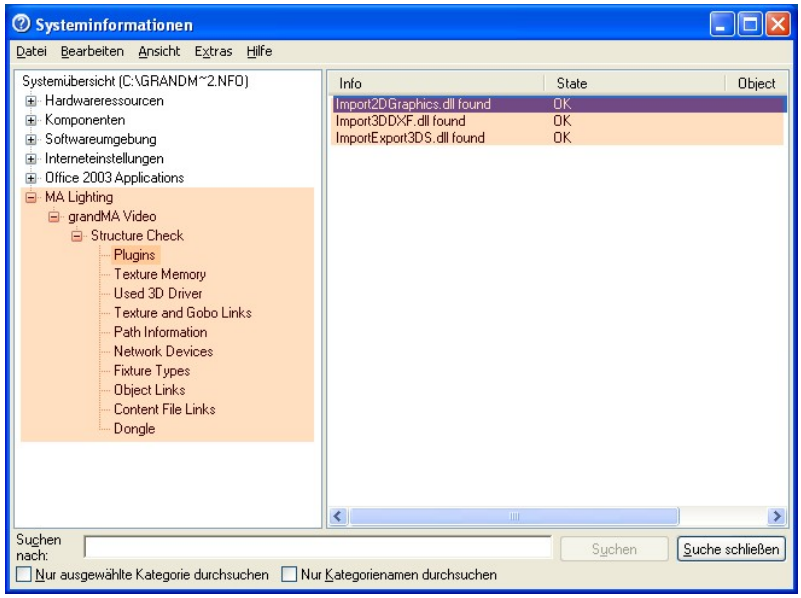
In the 'Strucure Check' dialog push the button ‚Export'



Type a file name with the extension ‚.nfo'



The information is compiled in a file. This takes approx. 30-60 seconds



Additional to the system information grandMA video information are assorted. The resulting file (.nfo) can be opened with the Windows standard information application and be evaluated.

17 BluffTitler

grandMA Video comes with a licensed software package BluffTitler .

With BluffTitler you can create spectacular 3D text animations and export them as AVI. All TrueType fonts installed on your computer can be used.
For further information consult the BluffTitler documentation.

The BluffTitler license is an MA Lighting OEM-licence which is only valid together with a valid grandMA video licence. It is not allowed to redistribute any license keys!

BluffTitler End User License Agreement

Before installing this software, carefully read the following terms and conditions.
Installing BluffTitler indicates your acceptance of this agreement.

Ownership of BluffTitler

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18 Appendix: How to create a Video Loop

This is a short tutorial on how to create a video loop with the software Ulead Video Editor.

Let's assume that you just returned home from a trip and now want to create a loop from one of your recorded scenes on our tape.

Video capture

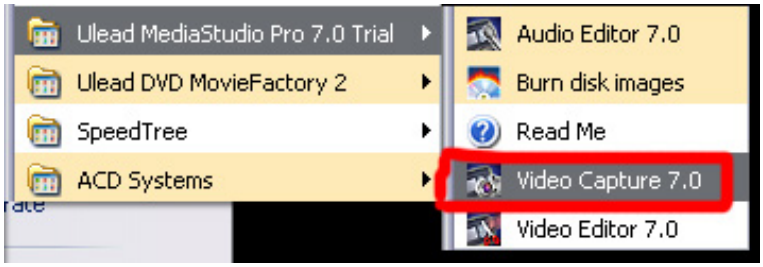
- **Insert the tape which contains your video material into the camera. Rewind the tape to the start if necessary.**

- **Connect the camera with an i-link wire to the FireWire port of your computer**.
  To transfer the video material with the best possible quality from the tape to the computer, make sure that your computer has a FireWire adapter.

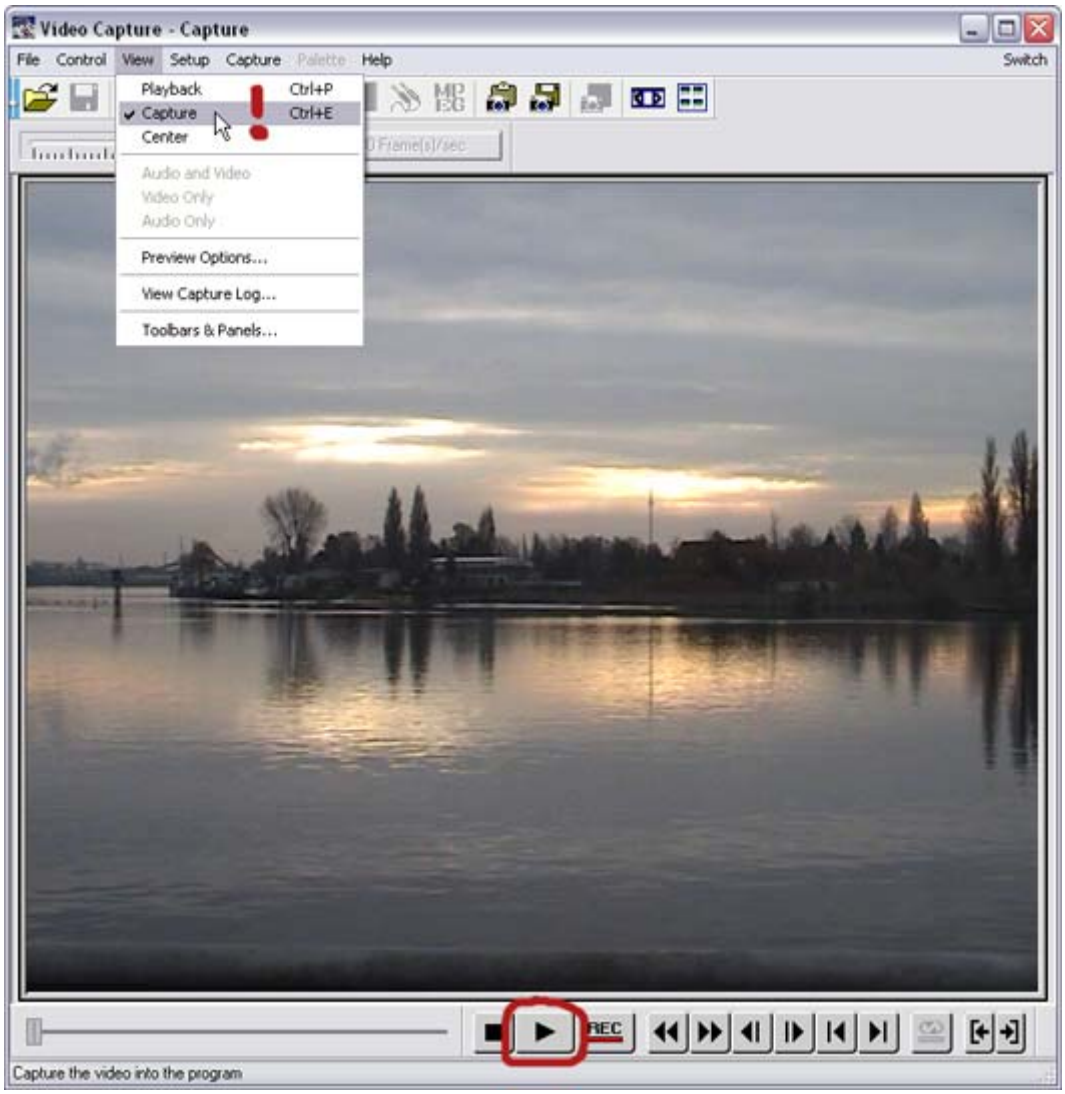
- **Switch your camera to Playback Mode**
  Every camera has two main operational modes. One is for recording and is often called the camera mode. The second mode is the playback-mode. This mode is for watching your video in the camera or capturing (transferring) it to an external device.

If you have any problems regarding the handling of your camera, you should look at the user operating manual for your camera.

- **Start the Ulead Video Capture software (current version 7.0)**
  Ulead divides the functions of capturing and editing video into two applications. The module which helps you to transfer the video material onto your hard drive is called Ulead Video Capture. You can find it in your start menu under the entry for Ulead Video Editor.



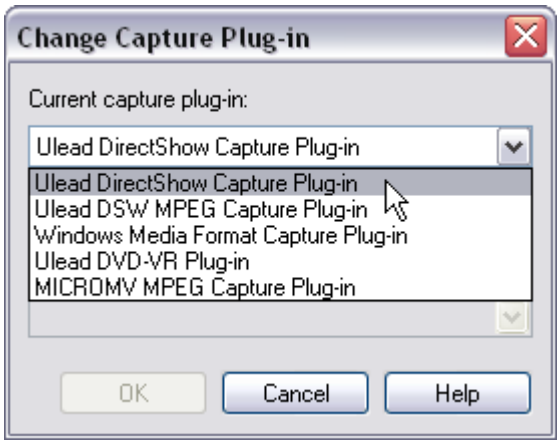
- **By now you should see an image of your tape in the main preview window.**
  If this isn't the case, just click the play button in the control panel in the lower screen area. Make sure that preview mode is active. You can find it under menu/view.



If you still see no image of your video, you have to make sure that your recording-plug-in is configured correctly. You can do this under menu/setup/recording-plug-in.

Common types are:

- Ulead VFW Recording Plug-in (for Adaptec/PAPI 1394 capture-adapters)
- Ulead DirectShow Recording Plug-in (for TI 1394 capture-adapters)
- Ulead DV Recording Plug-in (for other types of DV capture-adapters)



If your settings are correct, but you still see no image and many or all of the control panel-elements are not active, you have to make sure that the right entry for your camera is set under menu/setup/device-control. In most cases, this will be one of the DV-cam drivers. You can see information about the selected driver in the info field under the dropdown menu.

Now I will explain the simplest procedure: capturing <u>one</u> video-clip

---

- **<u>Recording a single video clip</u>**

This is the easiest way to capture a single clip from tape to your hard disk.

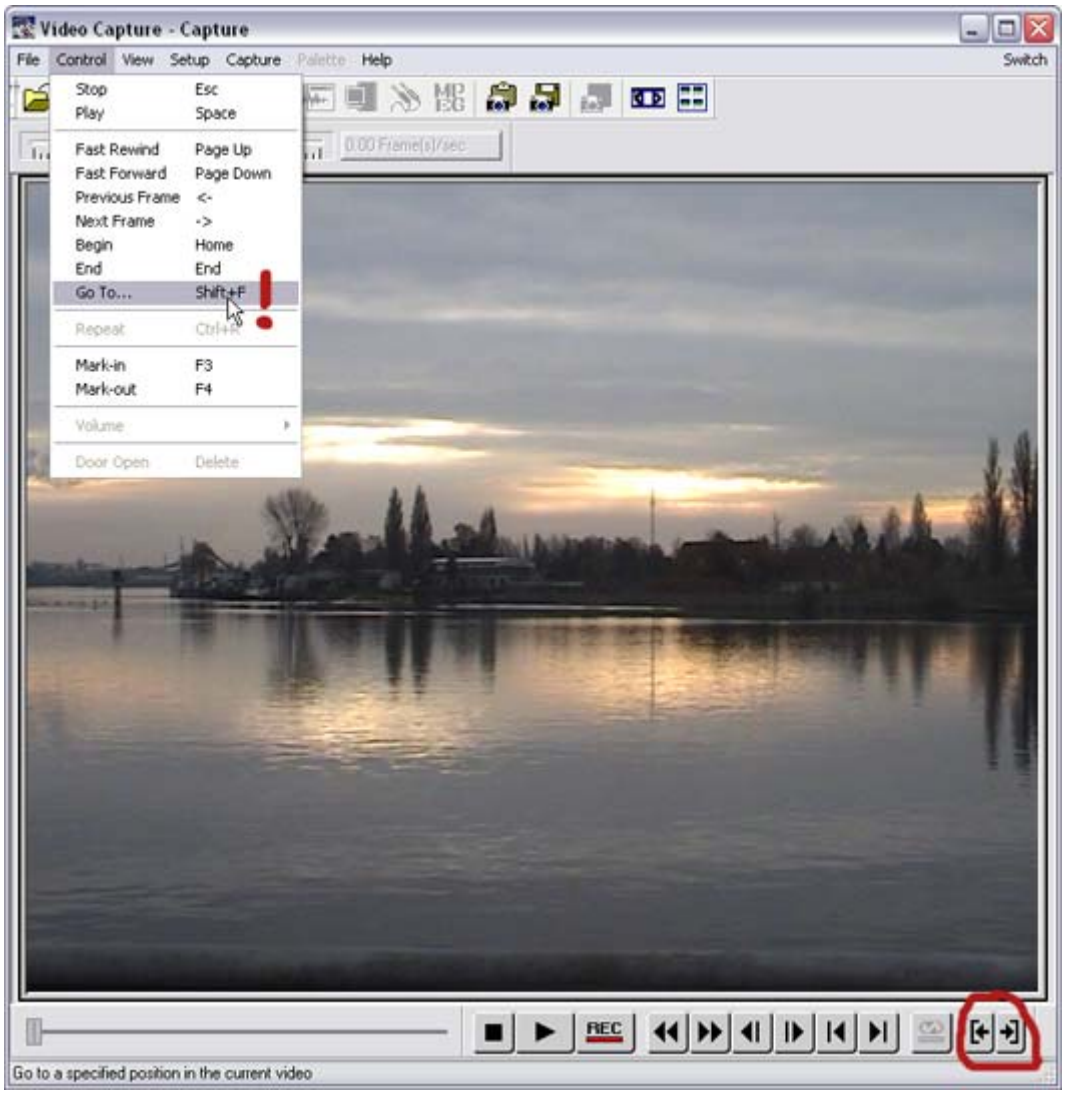
- **Wind your tape to the position where your clip starts.**

Give your clip some extra space at the start (head) and the end (tail), because it will be safer for later editing to have a bit of overhang at the ends of the clip. From the position where your clip should start looping, wind the tape back approximately three seconds. You can trim the parts you don't want to see later in the video editor very easily.

You can see information about your position in the clip in the lower screen area. If you want to jump to an exact time, just go to menu/jump to and enter the time you want to jump to.

Now that you have found your start position, click the inpoint button to mark the starting point.

Repeat this step for the stopping point of your clip. Click the button for the outpoint of the clip.

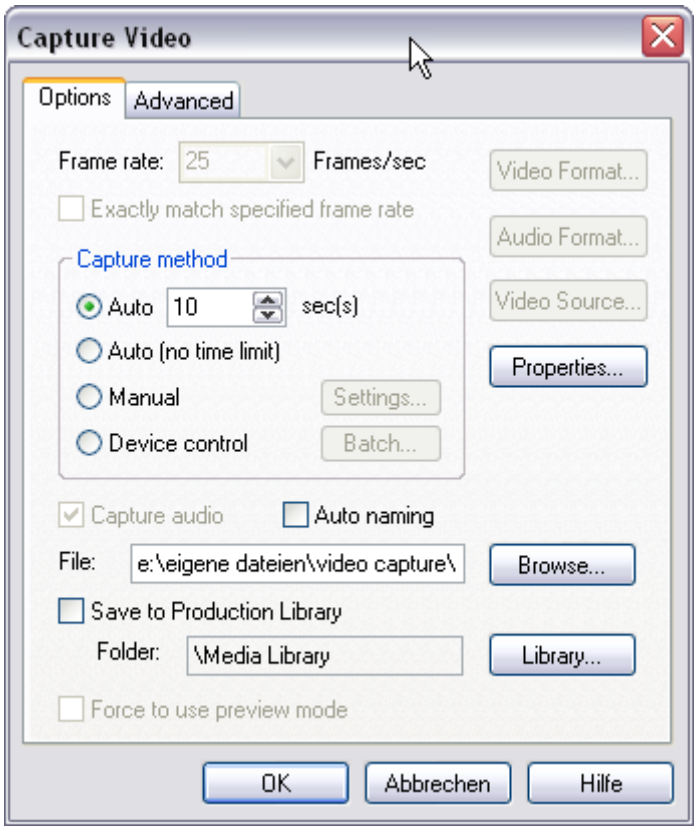


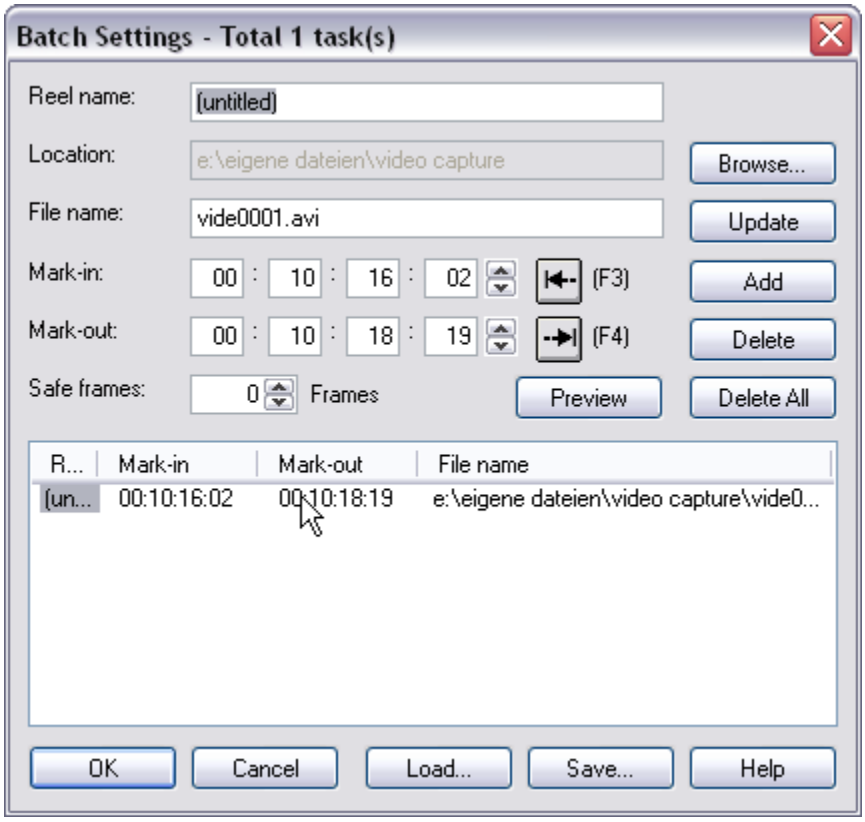
- **Click the Record Button in the Control Panel**

Recording will not start immediately. First a dialogue window pops up, where you can set some parameters. Important at the beginning are:

- **The name and local path of the video file you want to save**
- **The recording method**
  - Auto (with time limit): records the video from the inpoint for the specified amount of time.
  - Auto (no time limit): records the video, until you stop it by left-clicking the mouse or hitting ESC
  - device control: you can specify when the recording shall start and when it should stop, by setting an inpoint and outpoint. You can also configure batch-capturing

For our example we choose „device control“, because we had already set the in and outpoints. Remember? ;-). Another window opens with parameters for the recording. Check the name and the path of the file. Make sure that there is only one clip in the lower area of the window, the one which you set up.



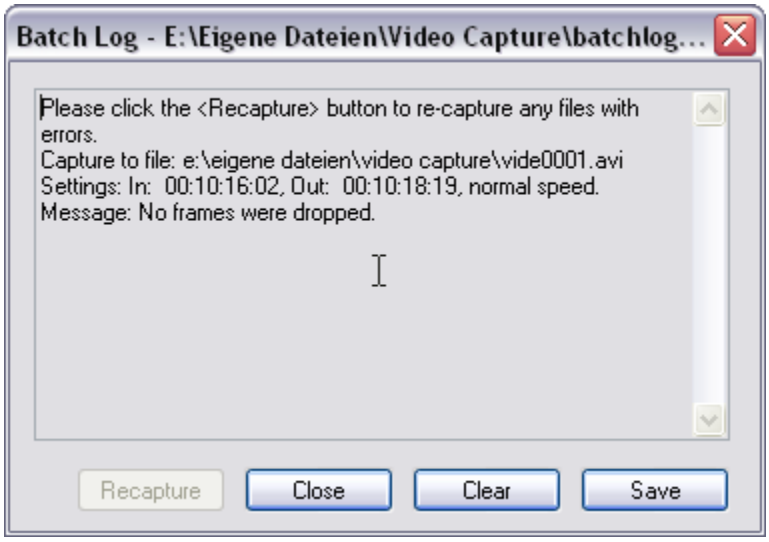


- **Start the recording by hitting OK.**

Recording starts. You can observe the current status of the capture process in the status bar in the lower screen area.

- **Now you have your first clip ready for editing!**

After the capturing has been finished, a message window pops up which informs you about the result of the process. Usually everything is fine, so you can just close the window.


Batch Log - E:\Eigene Dateien\Video Capture\batchlog...
Please click the <Recapture> button to re-capture any files with errors.
Capture to file: e:\eigene dateien\video capture\vide0001.avi
Settings: In: 00:10:16:02, Out: 00:10:18:19, normal speed.
Message: No frames were dropped.
Recapture
Close
Clear
Save

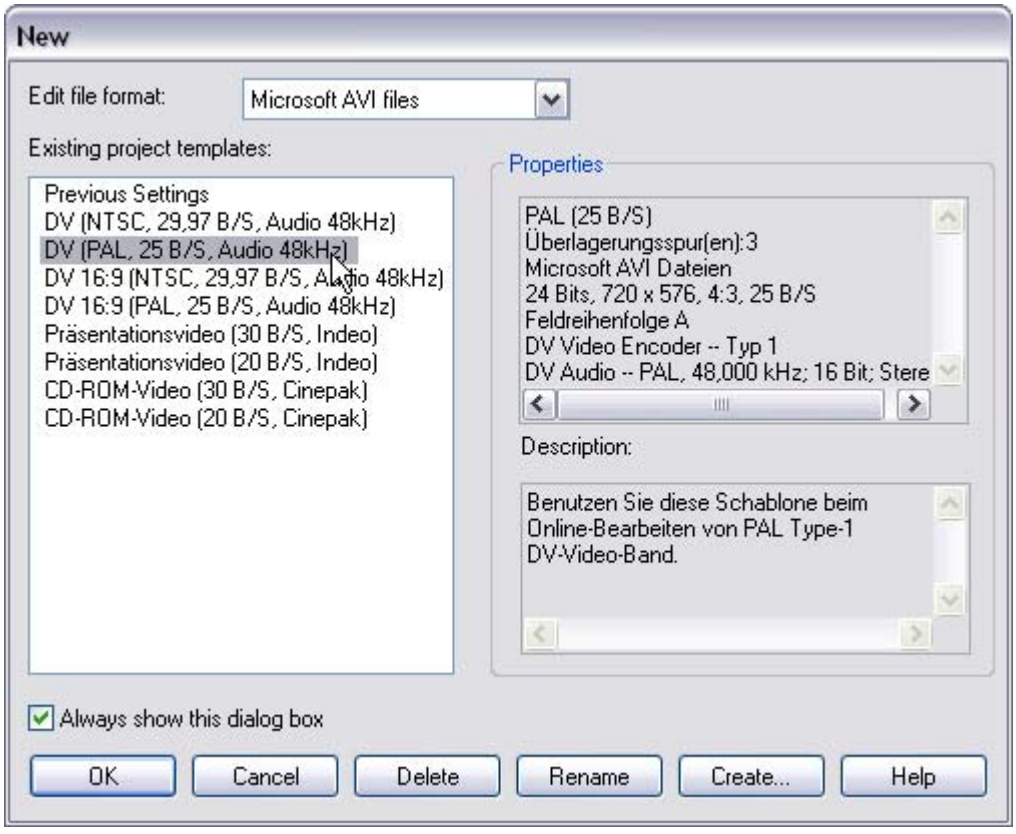
If you open the folder, where you saved your clip file, you should find an avi file. This can be, depending on the length of the clip, rather big, because it is uncompressed video.

- **You can quit Ulead Video Capture now.**

Video editing

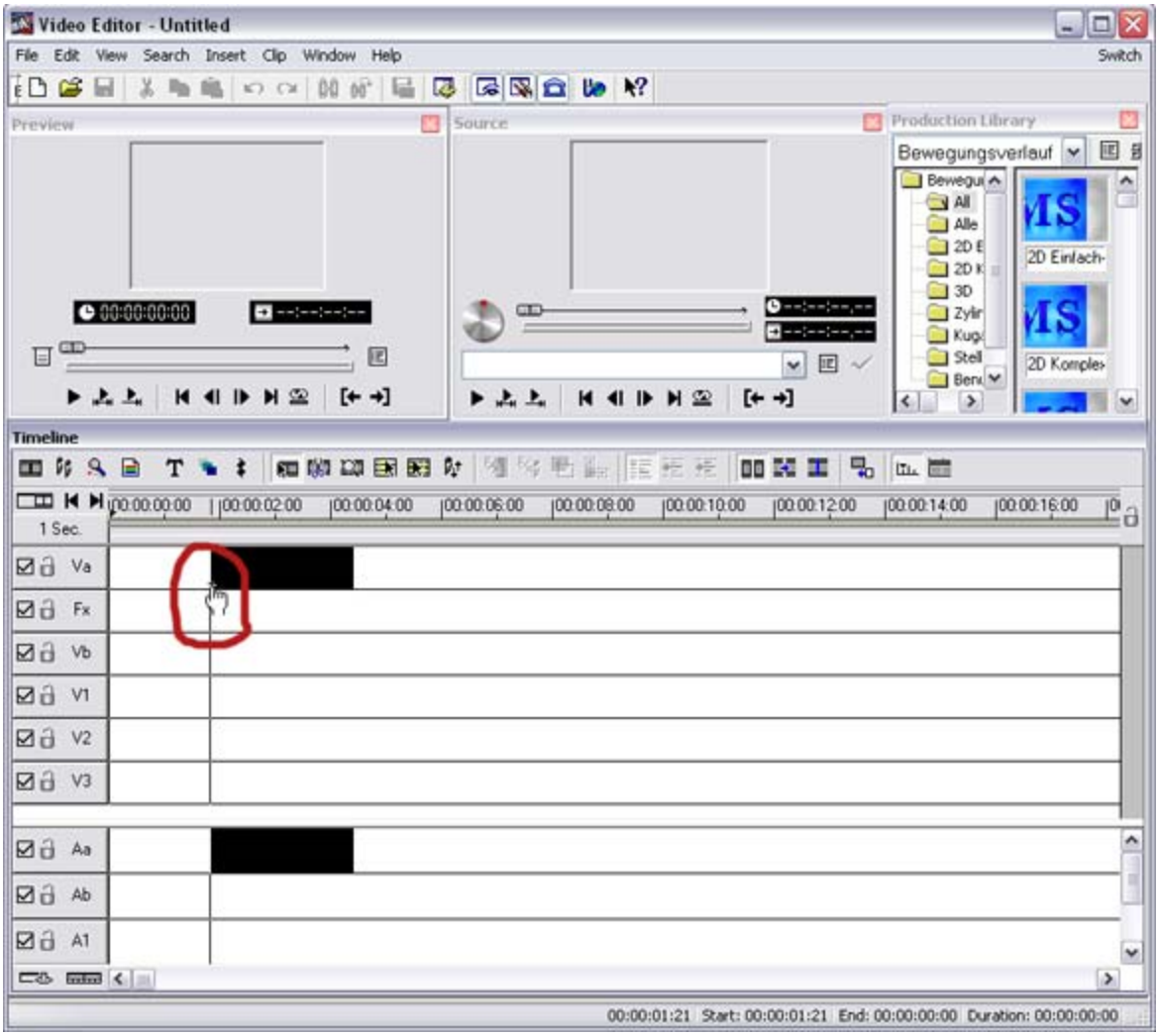
- **Start the software Ulead Video Editor.**

A window will pop up first, asking what kind of project you want to create. Choose DV(PAL, 25 B/S, Audio 48 kHz).



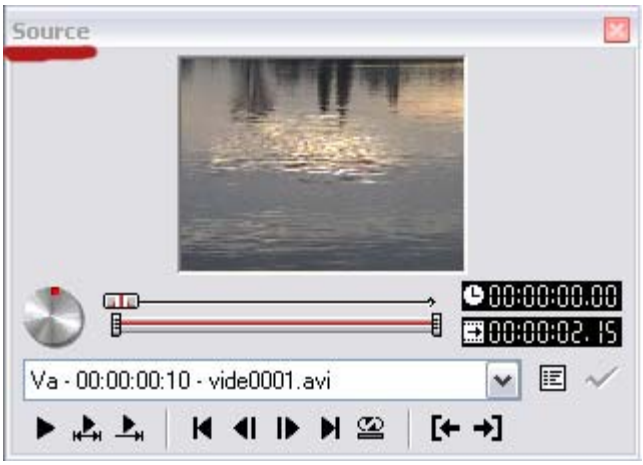
- **Import the previously created clip.**

You can import clips by double clicking one of the video tracks in the timeline. A file-open-dialog will appear, in which you can select your clip. When you open the file, the window will disappear and the clip „becomes glued“ to your mouse pointer. Place this clip at the beginning of the first videotrack Va.



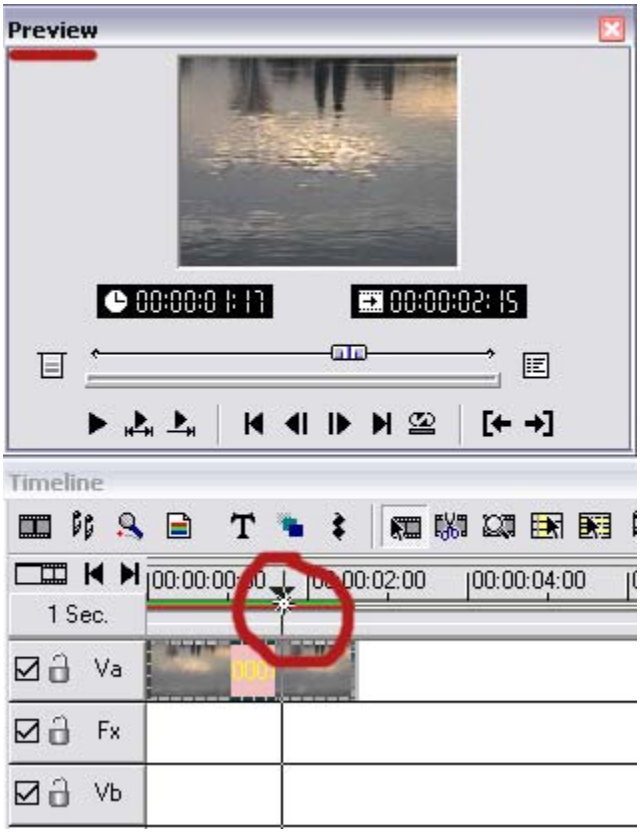
- **Doubleclick the clip in the timeline.**

The clip will appear in the source window. This is, as its name indicates, the video source from which you will work, and not the clip which will be created by editing the it.



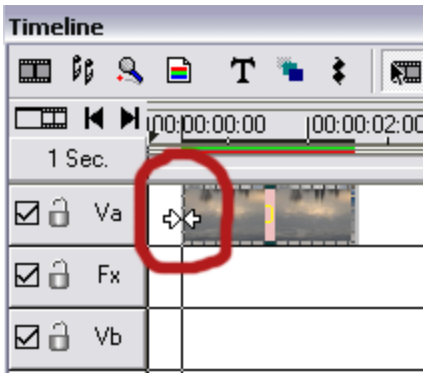
- **Click in the timeline above the video tracks**

When you hover with the mouse pointer a bit above the video tracks, the pointer will turn into a little „star“. If you press the mouse button now and move the mouse, you will move the play head on the timeline. The upper-left preview window will change now, because it always shows the video directly under the play head.



- **Reduce the length of the clip to the right duration.**

You know now how to view your clip in the video editor. It's very likely that the clip is not have the right length anymore. Changing the length (duration) is very simple. Move the mouse pointer over the right edge of the clip.
The mouse pointer will change into a symbol of two little arrows.



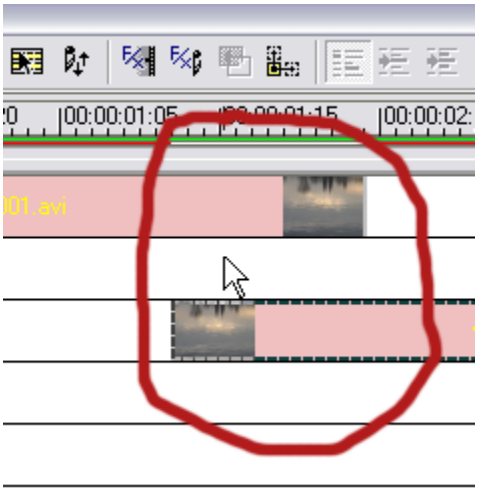
Left-click the mouse button and drag the edge of the clip toward the beginning of the clip. When you release the mouse button, you have reduced the length of the clip. It will stop now at the new end. You can do the same with the beginning of the clip.

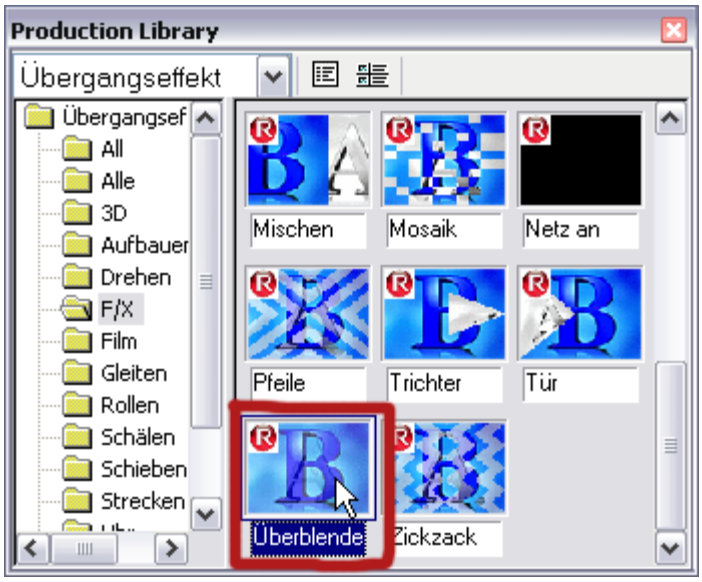
- **If necessary: Move the clip back to the beginning of the videotrack**

It is likely that you have now some spare room at the start of your clip, because you reduced its length. Drag the clip to the very beginning of the video track and drop it there. Notice that the clip will snap to the beginning of the video track.

- **Copy the clip and place the copy at the end of the original**

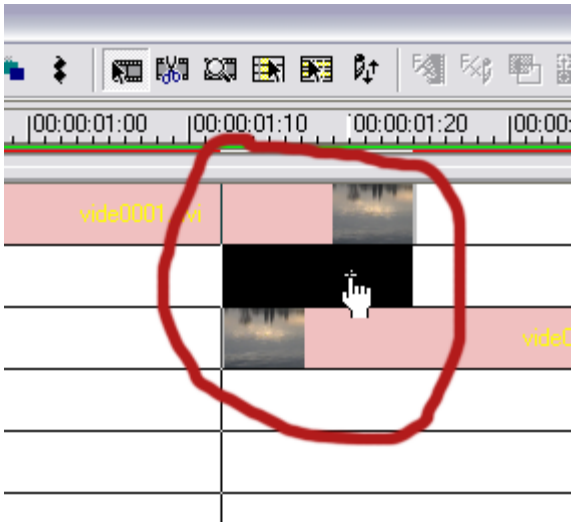
Hit CTRL and left-click the clip. Drag it into the second video track Vb and place it there. Now you have created a copy of the original clip. Adjust the clip so that it starts approximately 3 seconds before the original clip ends. A cross-fade effect could later be placed in the area where both clips overlap each other.





- **Place a cross-fade effect between both clips**

Drag the effect into the video track area. Crossfade effects can only be placed in the transition effects track. Place it right into the area where both video clips overlap. The crossfade effect will adjust its own length to the length of the overlapping area automatically. You now have created a soft crossfade from the end of the first clip into the beginning of the second.

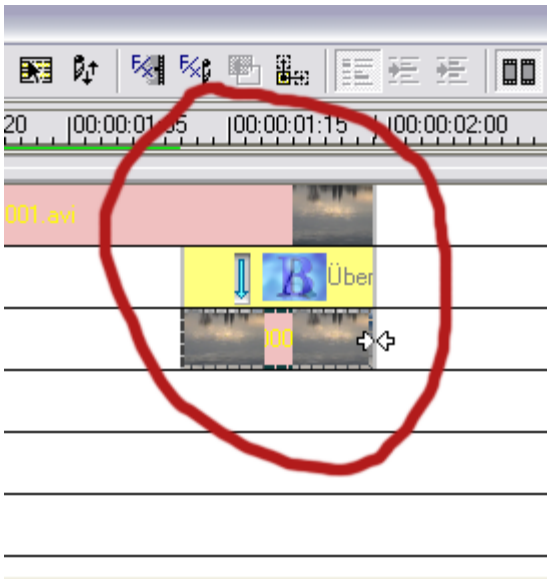


A window pops up and gives you more options to configure the crossfade effect. But we are happy with the default-settings right now. Just click OK.

Notice that Ulead Video Editor computes the manipulated video frames each time you use an effect on the clip. This can lead to a short delay because you must wait until the application has finished rendering the new frames.

- **Reduce the length of the second clip**

Reduce the length of the second clip until its end meets the end of the first clip. The whole movie is now as long as the first clip.



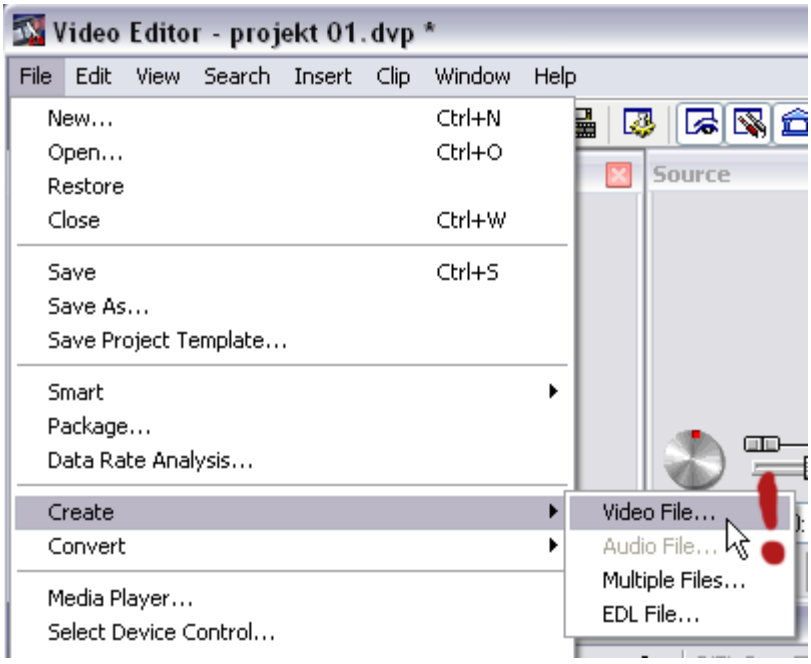
But what is the difference now?

The clip now will crossfade into its own beginning. For that we needed the copy. Now the clip is ready for a loop playback.

Save the project.

- **Compress and export the clip.**

You can export the finished clip under menu/file/create/video file. Enter a path and a name for your file in the next dialog.



In the options section you can choose a specific compression codec, which will reduce the size of your video file significantly, though causing some loss of quality. This will help you to maintain constant playback without delays during which the video player would have to wait for new data.

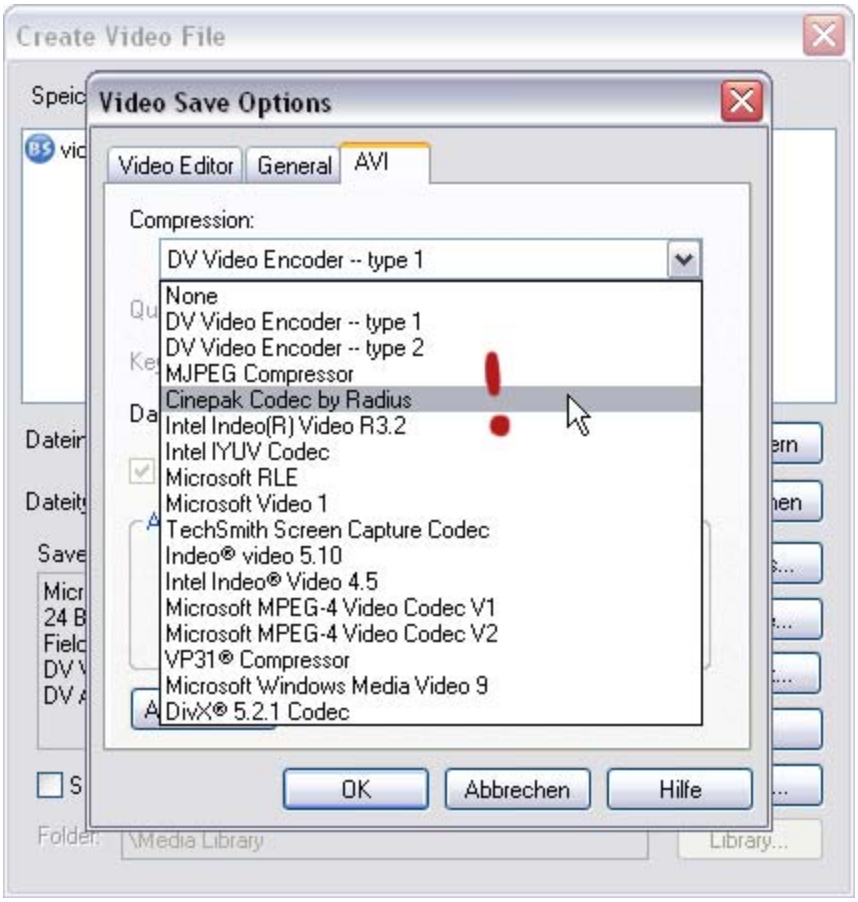
You have to make a compromise here. You can get really good codecs which offer both: very good image-quality and very low file-size. However these codecs are often not free for commercial use. The DivX codec belongs in this section. But you cannot expect that this codec will be available on the target platform of your video. The worst thing which can happen is that you see a plain black rectangle instead of your clip.

A good standard choice is the cinepak codec. This codec is a bit older, and cannot compete with the image quality/file size ratio of modern codecs, but it has some advantages.

1. An acceptable image quality which comes with a reasonable file size.
2. Cinepak is installed on every Windows system by default

That means that in 99.9% of all cases your clip will be playable on any Windows computer.

So, we decided to use the Cinepak codec for our example. Choose the codec in the codec settings. You can find them under the third tab „AVI“. The default settings for the cinepak codec are ok for us.



You can set the output size of the video under the second tab „General“. Switch to „User Defined“ and enter 1024 x 768 to adjust the size to the resolution of a video projector. In the data track dropdown menu switch to „only video“, because you usually drop the audio track.

Save the file with the chosen settings.

Good luck!

19 Warnings

SEIZURE WARNING

Some people (about 1 in 4000) may have seizures or blackouts triggered by light flashes or patterns, such as while watching TV or playing video games, even if they have never had a seizure before. Anyone who has had a seizure, loss of awareness, or other symptom linked to an epileptic condition should consult a doctor before working with the application.

Parents should watch when their children while using the program. Stop working immediately and consult a doctor if you or your child has any of the following symptoms: **Convulsions, Eye or muscle twitching, Loss of awareness, Altered vision, Involuntary movements, Disorientation**.

TO REDUCE THE LIKELIHOOD OF A SEIZURE WHEN WORKING WITH THE PROGRAM:

1. Sit or stand as far from the screen as possible.
2. Use the smallest available screen.
3. Do not work if you are tired or need sleep.
4. Work in a well-lit room.
5. Take a 10 to 15 minute break every hour.

REPETITIVE MOTION INJURIES WARNING

Working with the application can make your muscles, joints or skin hurt after a few hours. Follow these instructions to avoid problems such as Tendonitis, Carpal Tunnel Syndrome or skin irritation:

- Take a 10 to 15 minute break every hour, even if you don't think you need it.
- If your hands, wrists or arms become tired or sore while working, stop and rest them for several hours before playing again.
- If you continue to have sore hands, wrists or arms during or after play, stop working and see a doctor.

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